Chapter 6. Survey of Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do

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6.1. Introduction and Background

As part of the ICAR-University of Sydney Mamasani Archaeological Project, a preliminary archaeological survey was undertaken in conjunction with the excavations at Tol-e Nurabad and Tol-e Spid (see Chapters 3 and 4). The preliminary survey of the Mamasani region carried out in November 2002 (see Chapter 1; Figure 1.2) had visited the sites of Tol-e Nurabad, Tol-e Spid and Tappeh Sorna. However, it was immediately apparent that many other sites were located within the valleys, and an extensive survey was planned with the aim of characterising long-term settlement patterns.

Two valleys that lie to the north of the town of Nurabad-e Mamasani, known locally as Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do, were selected as the focus for the survey. They form part of a well documented ancient transport corridor connecting lowland sites in Khuzestan with the highland area of Fars (see Potts 1999:88; Tuplin 1998). Due primarily to constraints of time, the valley around Nurabad itself, the Dasht-e Nurabad, has not yet been surveyed, and this will be carried out in the next phase of the project.

The main aim of the preliminary survey of Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do was to establish the broad patterns of settlement history in the Mamasani District from the Neolithic period through to later historical phases - roughly from the beginning of the 6th millennium BC to the 2nd millennium AD. Unlike many other regional survey projects conducted in Fars, this has been done in conjunction with controlled excavations at deeply stratified multi-period sites, which have enabled the establishment of a securely dated local cultural sequence and the determination of diachronic patterns of local settlement. The interpretation of the ceramic and lithic material collected during this survey draws primarily upon comparison with material from Tol-e Nurabad and Tol-e Spid, and also on material from other published excavations and surveys.

As outlined in Chapter 1, one of the overarching theoretical aims of the Mamasani Archaeology Project is to understand how the intermontane valleys that lie along the long overland routes between Khuzestan and the Kur River Basin interacted with the surrounding regions. These mountain valleys are not well known, and have much to contribute to our understanding of the social, political and economic integration (and disintegration) of highland and lowland communities in southwestern Iran (Miroschedji 2003:21). The use of our survey data to reconstruct past settlement patterns in the Mamasani District will provide a key element for understanding these issues.

The Kur River Basin is the most comprehensively studied region of Fars. Although archaeological research was carried out at various sites in the Kur River Basin during the early 20th century, the first extensive survey of the region was undertaken by Louis Vanden Berghe in the early 1950s. Using stratified ceramic evidence recovered from over 20 soundings at sites located within the Marv Dasht he developed the first regional chronology for Fars, focussing primarily on the sequence of prehistoric painted wares (Vanden Berghe 1952; 1954). Vanden Berghe identified a number of phases that preceded the Chalcolithic Bakun phase, previously identified as a result of the Oriental Institute Excavations at Tall-i Bakun A and B. He named these Neolithic phases the Mushki and Jari cultures, after the type sites where they were first identified (Vanden Berghe 1954). He also identified a sequence of later painted pottery, which he named respectively the Kaftari, Qaleh, Shoga and Teimuran cultures (see Vanden Berghe 1952: 212-5; 1954; 400-405; 1959: 41-44).

A more wide ranging archaeological survey was begun in the Kur River Basin in the late 1960’s by William Sumner (1972). In addition to providing a clear impression of the distribution of occupation relating to the cultural phases identified by Vanden Berghe, Sumner was also able to identify two additional prehistoric phases. These he named the Lapui and Banesh phases, after the name of the town or village that was situated closest to the sites characterised by either type of ceramic material (Sumner 1972: 24, 40-41). Sumner’s survey was also instrumental in the identification of the site of Tal-e Malyan as the site of the city of Anshan (Hansman 1972; Reiner 1973). The work carried out by scholars involved in the Tal-e Malyan excavation project included a number of additional surveys in the Kur River Basin focussing on specific periods of occupation (Gotch 1968; 1969; Alden 1979; Jacobs 1980; Rosenberg 2003), and these additional surveys have led to a revision of theories concerning settlement patterns and the chronological phases they represent (e.g. Sumner 1977, 1988b).

Outside of the Kur River Basin, Sir Aurel Stein carried out two major surveys of routes through various parts of southwest Iran in the 1930s, including a visit to the Mamasani region (Stein 1936; 1940). Stein also visited the Fasa and Darab regions to the southeast of the Kur River Basin (Stein 1936), and these regions were subsequently surveyed more intensively by Pierre de

Miroschedji (1972; 1974). Most recently, Abbas Alizadeh (2003b) has surveyed a number of the small intermontane valleys immediately NW of the Kur River Basin, and Mr. Nowruzi of the Shiraz ICHTO carried out a preliminary survey of prehistoric sites in Mamasani for his MA thesis (Nowruzi unpublished thesis Tarbiat Modares University).

As noted in Chapter 1, limited attention has been paid to the route from the highland Kur River Basin to the lowland plains of Khuzestan. Since Stein's early and brief research on ancient routes in southwestern Iran, only two surveys undertaken along this route have been published. A survey of the Behbehan-Zuhreh River valleys north-west of the Mamasani region by Dittman concentrated on prehistoric material from the Neolithic through to the Uruk periods (Dittman 1984). A survey of the Ram Hormuz plain situated at the eastern edge of the lowlands, 160km south-east of Susa, recorded sites of all periods from Early Susiana up to the Islamic period, including the more recent historic past (Wright and Carter, E. 2003: 61).

6.2. Survey Methodology

For the preliminary survey of the Mamasani District a local guide, Mr. Hassan Habibi Fahliani, was instrumental in directing us to the numerous extant mound sites and other visible above ground ruins. The core survey team was Mr. Mohsen Zeidi and Mr. Alireza Khosrowzadeh of the ICAR, and Ms Bernadette McCall from the University of Sydney[1].

The survey was carried out over a period of 10 days in late winter, starting on 3rd February and finishing 17th February 2003. Beginning with the far northern end of the valleys, sites known to our guide were visited and their visible features recorded. A site constituted any anomalous above ground feature, such as a mound, visible architectural remains, cave, stone alignments or areas where it was clear that a feature had been modified in some way. Surface artefacts were collected from each site where they were present, to provide chronological markers for the period of use or occupation.

Once sites were located, each was allocated a running Mamasani Survey or MS number, and various data were recorded, including GPS position, site type, dimensions, local environmental information and any additional cultural data available from local informants such as place names or background history. Factors affecting the efficiency of collection were also noted, including vegetation cover, visibility and weather conditions. The GPS position was taken roughly in the centre of each site, and this was subsequently used to locate the sites on 1:25000, 1:50000 maps as well as aerial and satellite photos of the region. Digital photographs were taken and a sketch plan made. The artefact collection strategy concentrated on the site as a whole, rather than division into smaller discrete units, so no internal spatial definition was undertaken. No additional off-site collection or prospecting for other sites or artefact scatters was carried out.

Once the basic data were recorded, artefacts were collected by walking transects over each site. Team members walked across the longest and shortest axes of a site, and around the perimeter, covering an area of approximately 1 metre either side of their transect, collecting all artefacts within this range. While the length, and number, of transects varied from site to site, this method provided more control than non-systematic grab samples, and was considered the most appropriate method for obtaining a random sample of artefacts from sites of widely varying type and function (cf. Mattingly 2000: 8-9; Millett 2000: 53).

The most common artefacts encountered were ceramics, but occasionally stone artefacts, glass fragments or other small items were also found. Artefact collection was not limited to diagnostic sherds alone and no sorting was carried out in the field. Some survey methodologies utilise a strategy of counting all artefacts sighted while collecting only a representative diagnostic sample (Mattingly 2000: 9). This is particularly useful where high artefact densities are present, the materials are well known and spatial information is otherwise difficult to obtain. However, as we were potentially dealing with poorly documented local ceramic types, it was not followed here. Although this meant numerous body sherds were collected, the primary aim was to gather a sample of all fabrics and eliminate any bias towards known ware types. As excavations at Tol-e Spid and Tol-e Nurabad were expected to produce previously unidentified wares in good stratified contexts, the potential for each sherd to provide chronological information was considered important.

The results presented below in Sections 6.3 and 6.4 rely significantly on comparisons with published ceramic data from excavation and survey reports from other areas of Fars (particularly the Kur River Basin) and Khuzestan (especially Susiana). As with any comparative study the use of ceramics as chronological markers can be problematic, particularly where the ceramic sequences are punctuated by large gaps, or when they span very long 'ceramic' periods (Wilkinson 2003: 223). Unfortunately, the known material sequences for Fars, both prehistoric and later phases, appear to be typified by such lacunae in the ceramic record. Until this is clarified by further work (such as at Tol-e Nurabad, Tol-e Spid, and by recent work at Tal-e Malyan, see Miller and Sumner 2004; Alden et al. 2005) our analysis of the settlement history will display the same characteristic patterns. It is therefore difficult, in the early stages of this research, to assess the degree to which reconstructed settlement patterns reflect archaeological "reality" or, alternatively, the inherent logical biases of our methodological approach and the available reference data.

Where the Mamasani Survey differs from many others previously undertaken in Fars is the ability to interpret the results of surface artefact collections in comparison to radiocarbon dated deposits excavated from two deeply stratified multi-period mound sites within the same region. Although the plains around Tol-e Nurabad have not been included in the survey zone, material from this site and from Tol-e Spid have made it possible to establish a thorough regional ceramic chronology (see Chapters 3 and 4). The use of material excavated from local sites to interpret the Mamasani Survey materials, goes some was towards overcoming problems created by a heavy reliance upon previously published survey results and site reports from other regions. The only problem with the reliance on the excavated sequences from these two sites is that there have been no later Sasanian or Islamic occupation phases revealed in the soundings, so any localised wares dating from these periods may be difficult to identify.

A limited number of the ceramic wares collected during the survey are unknown from either the excavated soundings or published data, and cannot be securely assigned to a specific cultural phase. As such the settlement distributions discussed below should be viewed as an indication of broad trends only, which correlate with the emerging local ceramic chronologies established by ongoing work at Tol-e Spid and Tol-e Nurabad.

Various non-ceramic finds were collected during the survey, the most prominent of which were lithic artefacts encompassing a range of technological approaches. No attempt was made at total collection or quantification, and where numbers of finds are large for any one site, this reflects a generally higher density of this type of artefact at the site, within the transect areas. Chipped stone artefacts were much harder to categorise chronologically than the ceramic assemblages, but available data from Tol-e Nurabad and published reports from Fars and Khuzestan provided a basic framework with the same practical usefulness and logical shortcomings as in the analysis of ceramic finds. Preliminary results indicate that lithics typical of Neolithic and Chalcolithic sites were present at a number of sites, and tend to correlate with the dating of ceramics.

Limited amounts of other artefact types were recovered, although these have generally not been discussed in detail in the following sections. These include some glass vessel fragments, (either free or mould blown, with fabric colour, quality and design placing them in the Early to Middle Islamic period), beads, clay objects, architectural fragments and ground stone artefacts.

The dimensions recorded for each site were calculated from the most obvious preserved areas of the mound, architectural feature or artefact scatter, and reflect a composite figure for the complete duration of site use. Areas were calculated simply by measuring maximum length and breadth, and multiplying these figures. This has perhaps resulted in an over-estimation of area in a few cases, particularly for some oval, or circular mounded sites, but the method is simple and provides consistency with other survey results from Mesopotamia and Iran (cf. Sumner 1990a: 5). Conversely it is likely that in many instances the measurement of settlement areas has been understated, particularly for earlier periods where sites are likely to have been buried under alluvial deposits, or obscured by later occupation layers and damaged by various cultural processes (Wilkinson 2003: 41).

As this was a preliminary, extensive survey, no intensive unit based collections were made at the sites. Therefore, no density data was obtained from which estimates of relative site sizes by phase could be made. This was not an aim of the survey, and it was difficult in many cases to determine site boundaries for even the most recent phases.

6.3. The Results of the Survey

A total of 51 sites were visited during the survey, including the heavily disturbed site of Tol-e Spid, which is centrally located within the Mamasani survey area. The types of sites encountered during the survey included single and multi- period mounds, cave sites, architectural remains, and features such as cemeteries. In some instances the exact nature of sites was unclear.

Thirty five of the 51 sites visited were identified as mounded sites, which varied greatly in size, height, and visible surface features (e.g. see Figures 6.1-6.4). The larger mound sites typically fell within the range of 1 to 2.1 ha (MS1, MS11, MS15, MS19, MS24, MS31, MS39, MS44, and MS51). Most of the mounds were smaller, measuring less than 1 ha. The largest sites recorded (MS34, MS35, and MS48) were not mounded sites, but comprised mainly architectural remains, and dated from the more recent Islamic periods. The largest of these, MS35 (7.5 ha), incorporated a complex of small architectural units, with low stone walls almost completely covered by soil build-up. Most sites were located within the alluvial zone of the plains, particularly the mounded sites, and it was apparent from the material remains that many of these had been occupied over multiple cultural periods. Caves and a few other sites were found on the slopes surrounding the valleys, although the reconnaissance in such areas was only cursory.

Mound or tell sites were the most dominant archaeological features recorded during the survey. This is a reflection of both their easily recognisable form and relative preservation within the landscape. It was apparent that many smaller mounds have been extensively damaged by modern land-use practices, and some may have disappeared completely. Most of the larger, higher mounds provided evidence for multiple periods of occupation, while smaller mounds generally appear to have had single or more limited phases of occupation. A number of sites were interpreted as settlements by the nature of their architectural remains. Other sites visited include special purpose architectural remains, cave sites, and archaeological features, such as rock reliefs and artefact scatters (see Table 6.1 and Chapter 6.4). No surface artefacts were found at sites MS13, MS25 or MS29, so it was not possible to attribute these sites to any cultural phase.

The results of the survey have been presented with as much temporal definition as possible, using the chronologies of Tol-e Nurabad and Tol-e Spid to finesse the broader cultural sequences known elsewhere in Fars. This discussion focuses on broader interpretations of phasing only and presents the immediately apparent settlement trends. Our ideas and hypotheses will undoubtedly change as work continues on the archaeology and geomorphology of the valleys, particularly when more intensive survey and analysis is undertaken.

6.3.1. Settlement periods within Dasht-e Rostam-e Yek and Do

The spatial and temporal distribution of sites has been used to establish a basic framework for the long term settlement trends within the Mamasani survey area. Different chronological phases have been attributed to settlements based on the presence of securely identified artefacts typical of particular periods or cultures. The temporal distribution of occupation at sites in the survey zone, summarised above in Table 6.1, is discussed by chronological phase in the following section.

Palaeolithic/Aceramic Neolithic periods

For evidence of early human occupation in Iran, worked stone artefacts provide the best preserved source of material, albeit with their own inherent problems when attempting to use them as chronological markers. During the Mamasani Survey chipped stone artefacts were collected, where present, but no conclusive evidence was found of any Palaeolithic stone tools. This is hardly surprising considering that the areas considered to have the greatest potential for evidence of early occupation, such as cave and rock-shelter sites (Smith 1986: 26, see Rosenberg 2003:98), were not systematically targeted during the survey. The Dasht-e Rostam-e Yek and Do plains are delineated by steep mountains containing numerous cave sites and rock shelters. Some of these were visited briefly during our fieldwork, but a thorough investigation into their use and temporal occupation would be best conducted by comprehensive survey of all such sites throughout the study area and by undertaking a series of test excavations. MS9 in particular showed good potential for deep archaeological deposits (localised animal burrowing revealed a clearly stratified deposition sequence) and is located close to permanent water sources in Dasht-e Rostam-e Do. A single surface find, a small amorphous chert core, could not however be securely dated. Away from the caves, any early lithics present in the plains are likely to be buried under metres of later alluvial or occupation deposit, making such settlement or activity areas very hard to detect from surface survey.

Epipalaeolithic material has been recorded during surveys and excavations of cave and shelter sites in the northern Zagros Mountains (see Smith 1986: Figs 9-10) and in the Kur River Basin, the latter indicating an extension of the known area where Zarzian type lithic industries, associated with this period, have been found (Rosenberg 1985, 2003:107). The recent salvage excavations in the Bulaghi Gorge may have isolated the first clear evidence for aceramic Neolithic occupation of highland Fars (Tsuneki et al. 2007). While there is certainly the potential that Epipalaeolithic occupation within the Mamasani region exists, to date no diagnostic materials exhibiting clear parallels with Epipalaeolithic assemblages (e.g. Rosenberg 2003: 101-102) have been identified. Other surveys further north within the Zagros mountain valleys, for example in the Bakhtiari region, have identified lithic assemblages characteristic of the Epipaleolithic through to Chalcolithic periods. During the aceramic Neolithic in the Bakhtiari region, small ‘bullet’ cores, bladelets, and notched blades were common (some found in cave sites) and most artefacts were retouched. Blades were often truncated and had either trapezoidal or triangular sections (Zagarell 1982: 18-19). These common traits were observed in finds from a number of sites in Mamasani, with ‘bullet’ cores and other small bladelet cores and blades being found at MS8, MS11 and MS30. The area outside the cave site of MS30, particularly the slopes immediately below the various cave openings, were littered with numerous chipped stone fragments, including bladelet cores, blades, flakes, perforators and debitage suggesting raw materials were both obtained and worked in the vicinity. No Neolithic ceramics were observed at this site, allowing the *possibility* of aceramic Neolithic occupation, however caution must be exercised as certain characteristics of the chipped stone assemblage continued into the ceramic Neolithic and later Chalcolithic periods, as suggested by the bullet cores from MS8 and MS11, and attested at Tall-i Mushki and Chogha Mish.

Ceramic Neolithic period

Ceramics (Figures 6.5-6.6)

The characteristic Neolithic period or Archaic wares in the Mamasani District generally have similar vegetal-tempered fabrics with slipped and burnished surface treatments seen on material found previously at Neolithic sites in Khuzestan and Fars (see Chapter 1.4 and Chapter 3.8.2). Vessel forms typically include small and deep bowls, and simple jars, which all have plain rounded rims (see Figures 6.5-6.6). These forms are generally in keeping with typical Neolithic vessel forms seen in the Kur River Basin (e.g. Egami and Masuda 1962: Figs. 18-19; Sumner 1972: Pl. V: A-F, O-X;). However, the excavations at Tol-e Nurabad and the survey have both highlighted the fact that the painted Neolithic wares of

Mamasani generally display a range of mono- and bi-chrome decorative schemes that are not well paralleled elsewhere (see below, also Chapter 3.8.2). Similarly, although Shamsabad/Bakun BI plain vegetal-tempered ware is typically thought to occur later than the earliest painted wares in the Kur River Basin (see Chapter 1.4; Sumner 1972: 37-38; 1978; Voigt and Dyson 1992: I.137), the excavations at Tol-e Nurabad do not support the suggestion that in Mamasani there is a Neolithic phase characterised by the exclusive use of undecorated material (see Chapter 3.8.2). Therefore, both painted and plain vegetal-tempered soft wares will be discussed together here.

Table 6.1: Summary of survey results

Site Number	Site type	Area (ha)	Neolithic	Bakun	Lapui	Banesh	Kaftari	Mid Elamite Qaleh wares	1st Mill BC	Achaemenid	Post - Achaemenid	Sasanian	Islamic
MS1	Mound	1		X	X		X	X	X?	X	X	X	X
MS2	Mound	0.14						X		X		X	X
MS3	Mound	0.2										X	X
MS4	Mound	0.25			X		X?	X			X		X
MS5	Mound	0.4											X
MS6	Mound	0.4										X?	X
MS7	Architecture	0.5											X
MS8	Mound	0.8			X	X	X	X	X?			X	X
MS9	Cave	0.06		X						X?			X
MS10	Mound	0.65	X	X								X	X
MS11	Mound	1	X	X	X							X?	X?
MS12	Mound	0.5			X	X	X	X		X			
MS13	Architecture	0.6											X
MS14	Mound	0.75		X	X	X	X	X	X?	X?			X
MS15	Mound	1.95										X?	X
MS16	Mound	0.05	X										
MS17	Mound	0.8	X									X	X
MS18	Mound	0.25			X			X	X?	X?			
MS19	Artefact scatter	2										X	X
MS20	Mound	0.6	X	X	X					X	X	X	X
MS21	Cemetery	0.12											X
MS22	Artefact scatter	Uncert				X		X		X	X	X	X
MS23	Mound	0.65		X				X		X		X	X
MS24	Mound	2					X	X	X?				
MS25	Cave	0.012											
MS26	Mound	0.1										X	X
MS27	Architecture	0.6											X
MS28	Mound	0.2										X	X
MS29	Feature (wall)	Uncert											
MS30	Caves	Uncert	X*	X*									X
MS31	Mound	1.5		X									
MS32	Mound	0.35										X	X
MS33	Architecture	0.025											X
MS34	Mound	2.6										X	X
MS35	Architecture	7.5											X
MS36	Mound	0.7			X?							X?	X
MS37	Mound	0.5								X			X
MS38	Mound	0.96											X
MS39	Mound	1.3			X	X?						X	X
MS40	Feature (relief)	0.04					X**		X**			X	X
MS41	Mound	0.96											X
MS42	Mound	0.3						X	X?	X?	X?	X	X
MS43	Mound	0.3	X?	X	X	X?							X
MS44	Mound	1.25					X	X	X	X		X	X
MS45	Mound	0.75		X	X					X	X	X	X
MS46	Architecture	0.15								X	X?		
MS47	Mound	0.4			X	X	X?	X		X	X		
MS48	Artefact scatter	3.4											X
MS49	Architecture	0.15											X
MS50	Mound	0.7											X
MS51	Mound	2.1		X	X	X	X	X	X	X?	X	X?	X

Presence of wares by phase is indicated by ‘X’.
Where we lack certainty but feel there is a high possibility that a period is represented, this is indicated by ‘X?’
Some periods have been attributed by means other than ceramics -
* based on lithic finds only, ** date attributed from reliefs.

Sites

Neolithic ceramic wares were identified at five sites within the survey zone (MS10, MS11, MS16, MS17, MS20 – see Figures 6.2-6.3). Of these painted wares dominated and were concentrated at three main sites in Dasht-e Rostam-e Do (MS10, MS11 and MS20). The sites are similar in size and all lie in close proximity on the northern side of the plain, close to the Sarab Siah springs. MS16 is situated on the southern side of the valley, close to the Sarab Siah stream, and MS17 is located further south-east of the main cluster of sites (see below; also Plate 4).

MS20 is the largest and highest of the Neolithic sites in Dasht-e Rostam-e Do and several sherds collected from there are decoratively similar to bi-chrome painted wares from Tol-e Nurabad Phases A25-A20. This suggests an early 6th millennium BC occupation at MS20. Interestingly, some of the decorative motifs seen there have not yet been attested at Tol-e Nurabad, MS20 also provided the best parallels for the distinctive Neolithic carinated forms seen at Tall-i Mushki. While they do not share the same design motifs, the overall placement of the decoration is very similar (Fukai et al.1973: XLVII: 1, 11; XLVIII: 10).

Common to MS10, MS11 and MS20 is a group of reddish-orange slipped wares with mainly brown geometric painted motifs which exhibit parallels with later Neolithic contexts at Tol-e Nurabad (mainly A19), suggesting that occupation may have continued into the early 5th millennium BC (see Chapter 3.8.2). The Neolithic sherds from MS16 and MS17 include examples of a plain undecorated ware similar to Shamsabad/Bakun BI ware, which co-occurs with painted wares at Tol-e Nurabad, in increasing proportions from Phases A26 to A19.

It is notable that there are also marked similarities between decorative motifs found at MS10, MS11 and MS20. The ceramic parallels between these sites and with Tol-e Nurabad suggest that at various times during the Neolithic, all of these sites may have been occupied contemporaneously. The radiocarbon dates for the Neolithic period at Tol-e Nurabad indicate the building phases lasted for relatively short periods (80-350 years – see Chapter 3.7), which correlate with gradual stylistic changes in the ceramic decoration and form. One thing that is clear is there was considerable regional variation in methods of ceramic decoration in the Neolithic in southwestern Iran, and it is hoped that future analyses of our integrated survey and excavation data will identify temporal and spatial variation in the Neolithic period with greater precision than is currently possible.

Up until recently, the known Neolithic assemblages from Fars were generally considered to date from the second quarter of the 6th millennium BC (see Chapter 1.4; Voigt and Dyson 1992 II: 126-127)[2]. However, the earliest occupation phases at Tol-e Nurabad have been dated to the very beginning of the 6th millennium BC, and Phase A27, which is not dated absolutely, has tentatively been dated to the late 7th millennium BC. Although there is some evidence for Mushki and Jari type wares in the early levels at Tol-e Nurabad, most of the Neolithic ceramics from the site display what appears to be a local style of decoration (see Chapter 3.8.2).

Lithics recovered during the survey which can be attributed to the Neolithic period include retouched bladelets (without sheen) and perforators at MS10, and a limited number of blades from MS11. These are comparable with chipped stone artefacts from Tall-i Mushki and Archaic Susiana types from Chogha Mish, providing further evidence for Neolithic occupation. Some sherds from MS10 exhibit stylistic parallels with Archaic Susiana III decorative motifs from Chogha Mish suggesting perhaps that the region is part of a much broader cultural network (Delougaz and Kantor 1996: 231, Fig 34, Types IIIb and IIIc).

Settlement Distribution

MS10, MS11 and MS20 are located close to the ridge that marks the northern edge of the Dasht-e Rostam-e Do plain, at the point where the water from the perennial Sarab Siah springs flow into a lake that has formed in the central part of the plain (see Chapter 2.1.4). While MS 10 is located close to the point where the stream flows from the springs, MS11 and MS20 are actually located on either side of the stream at the point where it flows into the lake[3]. In contrast, MS16 is situated close to the course of the Sarab Siah as it flows from the lake and across the plain towards the Tang-e Shib. As such, it is linked to the same water supply system. MS17 however, is situated in the east of the valley, along the course of the seasonal Solak stream (see Chapter 2.1.4). Both MS16 and MS17 are heavily disturbed mounds, situated in areas of high visible ground water.

Except for MS17, all of these Neolithic sites are situated within a very specific part of Dasht-e Rostam-e Do, where there is a plentiful water supply and favourable environmental conditions, suggesting that there is a close relationship between environmental factors and the choice of settlement location. The location of MS17 along the Solak indicates that water must have flowed along this course regularly enough in the Neolithic to support habitation. Although not observed in the survey, Neolithic material was present as residual material in later deposits at Tol-e Spid, which is also located close to the course of a natural spring. Although the presence of this material suggests that Tol-e Spid might also have a Neolithic phase of occupation (see Chapter 4.7.2), there were still only a small number of Neolithic sites in Mamasani, which suggests that the population at this time was relatively small and concentrated around very specific environments[4].

Bakun period

Ceramics (Figures 6.7-6.9)

The buff wares of the first phase of Chalcolithic occupation mark a distinct change from the coarse straw-tempered wares of the Neolithic period. The Early, Middle and Late stages of the Bakun period, which have also been referred to as Bakun BII, Tall-i Gap and Bakun A phases respectively (see Chapter 1.4, Figure 1.2; also Alizadeh 2006), are primarily differentiated by the frequency of particular designs and vessel forms, and there are only a few distinctive markers per phase (Voigt and Dyson 1992: I.138).

Early Bakun standard buff ware from Tall-i Bakun BII evidently has occasional vegetal temper (Alizadeh 2006), but vegetal material does not appear to be common in the fragments seen in Mamasani (see Chapter 3.8.2). Middle Bakun wares are more compact, with fine inclusions, and most are well-fired, while often no inclusions were visible in Late Bakun examples. The fabrics can vary in colour from a yellowish or tan buff to greenish or greyish buff, which reflects variable firing conditions, which can similarly affect the colour of painted decoration, which varies from greyish or greenish-brown, to dark or reddish-brown (see Langsdorff and McCown 1942: 24-5). Where possible, fragments collected in the survey have been attributed to different phases on the basis of the variation and frequency of particular designs and motifs, which occur on specific vessel forms (Voigt and Dyson 1992: I.138). The vessel forms that were identifiable from the survey collections were typical of Bakun material known from the Kur River Basin, with forms shifting from the simple rims and rounded bases characteristic of the Early Bakun, to the appearance of ring and footed bases in the Middle and Late Bakun phases (see Figure 6.9). One example of undecorated vegetal-tempered Bakun coarse ware was also recovered (see Figure 6.8 [Site MS43 – MSP 1596]).

Sites

Buff wares were recovered from 11 sites in Dasht-e Rostam-e Yek and Do (MS1, MS9, MS10, MS11, MS14, MS20, MS23, MS31, MS43, MS45, MS51), and a number of chipped stone finds can also be attributed to this phase based on typological characteristics[5]. Of the 11 sites that produced Bakun buff wares, only 4 sites yielded more than 5 sherds (MS1, MS23, MS31, and MS43).

The sites that produced the largest collections of Bakun wares were MS1 and MS23 in Rostam-e Do and MS31 and MS43 in Rostam-e Yek, and all but MS 31 appear to have multi-period occupations. Smaller numbers of sherds were recovered from MS10, MS11, and MS51 (Tol-e Spid), and only isolated single sherds recorded for MS8, MS9, MS12, MS14, MS20, and MS45.

Ceramics from MS1 show clear parallels with Susiana buff wares (Late Middle Susiana) and material from the highland sites of Tall-i Bakun BII (Early), Tall-i Gap (Middle) and Tall-i Bakun A (Late). Various fragments also exhibit strong parallels with material from Tol-e Nurabad, Phases A18-17. Given the size of the site, and the range of designs and forms found, we can infer that MS1 represented a substantial settlement that might have been occupied throughout the Bakun period. The buff wares from MS10 and MS11 are readily paralleled with Middle Susiana wares from Chogha Mish, but there are also certain stylistic traits similar to material from Fars (e.g. Tall-i Bakun BII, Vakilabad), suggesting that there was a continuity of occupation between the Neolithic and Bakun periods.

In addition to material from MS1 and MS10, some of the material from MS31 appears to have parallels with Tall-i Gap, but the preservation of painted sherds is poor, meaning that motifs are generally incomplete. Plain or sparsely decorated buff wares typified the ceramics from MS43, and tentative parallels were found with Tol-e Nurabad Phase A16 (Middle Bakun). Form parallels can be found for material from MS23 with both Fars and Khuzestan, but of the poorly preserved decoration, the most convincing parallels come from Tall-i Bakun A. Fragments of a plain red-slipped fabric were collected at MS43, and these appear to have parallels with Shamsabad/Bakun BI ware which also continues in use into the Bakun period and is called Bakun coarse ware (Voigt and Dyson 1992: I.138; Alizadeh 2006). For sites with only single finds, it is difficult to determine whether they were occupied during the Early, Middle or Late Bakun period, or to comment on any specific stylistic parallels.

Settlement Dynamics

In general, most sites are located in Dasht-e Rostam-e Do, as they were during the Neolithic period, with the major exceptions of MS31 and MS43. However, the new sites are located in more open areas of the plain near to perennial streams, such as the Sarab Siah (MS1 and MS23), and are more widely distributed. This is also the case for the few sites located in Dasht-e Rostam-e Yek, with MS31, MS43, MS45 and MS51 all being located in open areas that are nevertheless near water courses.

The sites with clear evidence for Early Bakun occupation (e.g. MS1, MS10, and MS11) appear to all be situated close to each other in Dasht-e Rostam-e Do, and are also close to the Sarab Siah stream. The small number of sites suggests that the population continues to be small. Of the sites that appear to have Middle Bakun occupation (e.g. MS1, MS9[6], MS10, MS23, and MS31), most are located along the Sarab Siah, but a number are located along the Solak stream, which suggests that the stream was also being used as a water source. At this time there is also clear evidence for occupation in Dasht-e Rostam-e Yek (MS31, MS43) for the first time other than at Tol-e Spid. There appears to be more sites with Late Bakun occupation (e.g. MS1, MS10, MS11, MS14, MS17, MS23, MS31, MS43, MS45 and MS51), and these sites are distributed in both Dasht-e Rostam-e Yek and Do. The discovery of residual Bakun material in later deposits at Tol-e Spid suggests that a substantial Bakun period of occupation will be discovered below the earliest levels yet excavated, irrespective of the limited number of surface finds.

Lapui period

Ceramics (Figures 6.10-6.14)

The Lapui period is marked by the appearance of orange and red-slipped fine wares and a burnished coarse ware (see Chapter 1.4, Chapter 4.7.2; after Sumner 1972:42; 1988b), and examples of both wares were collected during the Mamasani Survey. However, the excavations at Tol-e Spid (Phases 24-20) have expanded the repertoire of Lapui fabrics and allowed more secure identifications for material (see Chapter 4.7.2). At Tol-e Nurabad (Phases A13-A12a) the range of Lapui wares is not as extensive as for Tol-e Spid but again typical Lapui forms appear to have been made from different fabrics, illustrating the potential for local variants. The Lapui fine ware seen in the survey is also typical of the types known from the Kur River Basin, but as is the case at Tol-e Spid, the fabrics display a more diverse range of colours and some show signs of being wheel turned (see Chapter 4.3.2 and 4.7.2; after Sumner 1988b). The vessel forms that were identified during the survey include a typical range of Lapui bowl, beaker and jar forms that have a range of lip forms, which are well attested at Tol-e Spid (Phases 24-20, see Chapter 4.3.2). Although Lapui wares are predominantly undecorated, one painted example was recovered, which is similar to fragments from Tol-e Spid Phase 23 (see Chapter 4.3.2, 4.7.2).

Sites
Lapui ceramics were collected from 14 different sites (MS1, MS4, MS8, MS11, MS12, MS14, MS18, MS20, MS36 (?), MS39, MS43, MS45, MS47, and MS51). Fewer than 5 artefacts were identified at six of these sites but of these, MS12, MS31, MS34 and MS36 produced securely identified Lapui vessel forms. The largest proportion of Lapui wares were collected from two mounds, MS39 and MS43, which are both situated in Rostam-e Yek. MS43 appears to have been occupied in both the Bakun and Lapui periods, while MS39 represents a completely new large scale occupation in the southeastern part of the plain (see Figure 6.4). Lapui material was also collected from the surface of MS51 (Tol-e Spid), which correlates with the results of the excavations[7]. Significant quantities of Lapui material were also collected from MS4, MS8, MS11, MS14, MS18 and MS20 all in Rostam-e Do.

Settlement Dynamics
All of the sites with Lapui period occupation continue to be located close to reliable water sources, such as the Sarab Siah, the Solak and the Cheshme Gurab, but there is a further increase in the number of settlements, and a shift in focus of settlement, with the foundation of a major new site (MS39) in Dasht-e Rostam-e Yek. Although Lapui material was collected from more sites in Rostam-e Do, the largest Lapui phase sites (MS39, MS43 and MS51) were all located in Rostam-e Yek. The settlement distribution suggests that during this period, the inhabitants of Mamasani began to make use of new areas on the plains by founding larger sites (MS39), and the settlements appear to be spread more widely over the two main valleys. The continued occupation of the areas adjacent to the Solak in Dasht-e Rostam-e Do suggests that this remained a significant water source, and indicates that some form of irrigation agriculture continued to be practiced.

Banesh period

Ceramics (Figure 6.15)
The Banesh period is marked by the appearance of distinctive mass-produced grit and vegetal-tempered ceramic forms, including the bevelled-rim bowl (BRB), the low-sided tray, and a range of goblet forms and painted wares that are well known at Tal-e Malyan and other sites in the Kur River Basin (Alden 1979; Nicholas 1990; Sumner 2003). Early, Middle and Late Banesh phases have been defined for the Kur River Basin through excavations at Tal-e Malyan and Tal-e Kureh, with the Late Banesh phase marked by the appearance of distinctive painted wares (see Alden 1979: Fig. 42; Sumner 1985; Abdi 2001). However, the excavation of Banesh phase deposits at Tol-e Nurabad (Phases A11-A6, see Chapter 3) and Tol-e Spid (Phase 18, see Chapter 4.3.2) has shown that the red-slipped buff ware first seen in the Lapui period, was used in the Banesh period to produce similar vessel forms and a range of new shapes (see Chapter 4.7.2). It is typically not straightforward to differentiate the specific forms that were used in each period, so here Banesh period occupation has been identified through the presence of vegetal and/or grit-tempered wares, which has been used to make distinctive hand, mould and wheel made vessels forms such as the BRB and tray forms.

Sites
Banesh wares have been identified at 8 sites in Mamasani (MS8, MS12, MS14, MS22, MS39, MS43, MS47 and MS51), and they were collected in far fewer numbers than sherds from other phases. While this suggests that there was a sharp decline in the numbers of settlements in Mamasani during the Banesh period, it may also be an artefact of the difficulty in recognising Banesh wares in surface assemblages.

A number of these sites (MS8, MS14, MS39, MS43, and MS51) appear to contain ceramics that may be similar to Terminal Lapui to Initial/Early Banesh wares at Tal-e Kureh in the Kur River Basin (Alden 2003a). Whilst still only speculative this may indicate some degree of continuity from the previous phase, and these fragments have been included here with Banesh wares (cf. Voigt and Dyson 1992:140). Of these MS39, MS43 and MS51 provided the best evidence for Tal-e Kureh types. If this is the case a decline in later Banesh phase materials means we may be able to surmise that a decline in site numbers took place after the earliest Banesh phases. It is notable that none of the material from Tol-e Spid Phase 19 resembled Tal-e Kureh Terminal Lapui forms, although it does appear to be transitional between the Lapui and Banesh phases (see Chapter 4.8.2). Later Banesh phases were less well represented in the survey, but included, MS22, MS47 and MS51. Identification relied heavily on comparisons with ceramics from Phase 18 at Tol-e Spid. Some sherds showed strong stylistic parallels to Banesh forms but often the fabrics were slightly different to published forms and may represent local variants.

Settlement Dynamics
In the Banesh phase there appears to have been a considerable decline in the number of settled sites. There are fewer settlements than during the Lapui period, but there is general continuity in settlement location, and only MS22 in Dasht-e Rostam-e Do appears to have been newly founded during this period. Although the largest

sites occupied during this period (MS39 and MS51) are situated in the Dasht-e Rostam-e Yek, most of the other smaller sites are located in Dasht-e Rostam-e Do[8]. Such a trend has been observed in the Kur River Basin, and elsewhere between Fars and Khuzestan (e.g. Sumner 1972; Alizadeh 2003b: 88, Wright and Carter, E. 2003: 67), indicating that the phenomenon was not restricted to the survey area alone. However, it must be remembered that in the Kur River Basin, the reduction in the number of sites in this period was in some ways matched by the rise of the urban site of Tal-e Malyan, which may have drawn much of the regional population within its environs. At present we have little idea if there was any expansion of site size in Mamasani at any of the potentially larger sites during this period, so it is difficult to assess whether a similar trend occurred here.

The excavations at Tal-e Malyan have demonstrated that although there is a dramatic depopulation of the Kur River Basin after the Banesh period, there is continued occupation at Malyan itself (attested by the H5 and H1s soundings, Miller and Sumner 2004; Alden et al. 2005). There is clear evidence for a long gap between Banesh and Kaftari phases at both Tol-e Nurabad and Tol-e Spid. It was not possible to identify any evidence for a Banesh-Kaftari transition from the survey material alone.

Kaftari period

Ceramics (Figure 6.16)

The Kaftari period is marked by the appearance of distinctive painted buff or light brown ceramics, as well as red-slipped and grey wares that have grit and vegetal temper, best known from the excavations at Tal-e Malyan (Nickerson 1983). Typical Kaftari vessel forms include necked jars with flattened rims (e.g. MSP 551, 1009, 1032, 1677, 1680), with painted geometric motifs commonly combining horizontal and vertical bands and cross-hatching. Kaftari period ceramics occur at both Tol-e Spid (Phases 17-15) and Tol-e Nurabad (Phases A5-A3). At both sites there appears to be a gap of some sort between the Banesh and Kaftari periods indicated by the stratigraphy and the available radiocarbon dates. There does, however, appear to be evidence for Middle and Late Kaftari phases at Tol-e Spid, suggested by changes in the ceramic assemblages, and by the radiocarbon dates (see Chapter 4.7).

Sites and Settlement Dynamics

Kaftari wares have so far been identified at 9 sites (MS1, MS4, MS8, MS12, MS14, MS24, MS44, MS47 and MS51). The best available evidence comes from the presence of the distinctive slipped and painted buff to brown wares, found at MS4, MS8, MS12, MS14, MS24, MS44 and MS51. Kaftari red wares were harder to identify but were recorded at MS4, MS44 and MS47. The major sites appear to have been MS8, MS12 and MS14 in Rostam-e Do and MS44 located in the far north-western corner of Rostam-e Yek (see Figure 6.5). MS47 had none of the light brown painted wares so is still viewed with some caution as a Kaftari site, with attributions based on red-slipped wares alone.

With the Kaftari period there is an apparent increase in sedentary population in the valleys, with a number of securely identified sites emerging, mostly located within Dasht-e Rostam-e Do. The pattern of site locations is quite different from earlier periods, and sees a move away from previously occupied areas. A group of sites cluster around the pass between the valleys, whilst no evidence has yet been found for Kaftari period occupation at the southern end of Dasht-e Rostam-e Yek. Interestingly, no Kaftari ceramics have been identified at MS40 (the structures adjacent to rock reliefs of Kurangun), although parts of the relief are believed to be contemporary with the Kaftari period (Potts 1999: 182)[9].

Elamite and painted ware traditions of the later 2nd and early 1st millennia BC

Ceramics (Figures 6.17-6.20)

The later 2nd and early 1st millennia BC in Fars are characterised by a number of distinctive ceramic wares that include both plain (Middle Elamite) and painted (Qaleh, Shogha and Teimuran) varieties (Carter, E. 1992: 295-7). Middle Elamite plain-ware ceramics are best known from Susa and Chogha Zanbil in Khuzestan (Gasche 1973), and Tappeh Farukhabad in Deh Luran (Wright 1981), and are also known from Operation EDD at Tal-e Malyan (Carter, E. 1996). The plain wares observed in the survey are typically brown or orange-brown in colour, have grit and/or vegetal temper, and appear in bowl (e.g. MSP 576, 790, 976, 1054, and 1716), goblet (e.g. 578, 999, 1050), and jar forms (e.g. MSP 553, 559, 557, 615, 644, 655, 661, 866, 889, 943, 1001, 1014, 1018, 1040, 1047, 1682, and 1713), with a range of distinctive neck, rim and base varieties. Ridges and finger impressed cordons on jars (e.g. MSP 792, 943, 889, 1040, 1041, 1042, 1681, 1682 and 1690) are also diagnostic. The stylistically distinct but generally contemporaneous Qaleh, Shogha, and Teimuran[10] painted wares from Fars are each marked by characteristic decorative styles and fabrics. Qaleh ware is typically decorated with simple horizontal and vertical bands, cross-hatching and dashes (e.g. MSP 103, 605, 1690, 1944), and ceramic typological parallels and radiocarbon dates suggest that Phases A2b-A1 at Tol-e Nurabad can be dated to the Qaleh period[11]. Shogha ware is a hand made red ware covered in a white slip and decorated with distinctive black bands and motifs, while Teimuran ware is orange-red with coarse grit temper, and decorated with upright triangles and horizontal lines in brown or black (see Carter, E. 1992: 295-297).

As noted in Chapter 1.4, there is very little evidence for occupation in Fars that is contemporaneous with the Neo-Elamite period occupations known at Susa (Miroschedji 1981a) and sites in Ram Hormuz (Carter, E. 1994), and although there is a very limited chronological overlap between Shogha and Teimuran painted wares from Fars and the Neo-Elamite I plain wares from Susiana, there is a gap in our knowledge of Fars between 900 and 550 BC (see Chapter 1.4). Examples of Shogha and Teimuran wares were collected in the Mamasani Survey, indicating that there may have been occupation at least in the early 1st millennium BC. There is a general similarity between many Middle and Neo-Elamite forms, making it difficult to differentiate the two, and while there are a number of fragments that appear to have Neo-Elamite parallels, they also have Middle Elamite parallels. Typical forms include goblets (e.g. MSP 1951) and jars with various forms of collared, flattened or rounded rims (e.g. MSP 555, 611, 706, 992, 997, 1523), often with ridges below the rim (e.g. MSP 555, 611, 997).

Sites and Settlement Dynamics
There are 14 sites with Elamite or Fars painted wares (MS1, MS2, MS4, MS8, MS12, MS14, MS18, MS22, MS23, MS24, MS42, MS44, MS47 and MS51). Many sites continued to be in use from the Kaftari period. The major difference is the consolidation of the large site of MS24 in Dasht-e Rostam-e Do and the decline in relative importance of MS44. Settlement is focussed in Dasht-e Rostam-e Do, with only a few sites being located in Dasht-e Rostam-e Yek, to the north of the Rud-e Fahlian.

Of the sites recorded during the survey, MS24 is by far the most significant. Occupying a low mound of about 2 ha it is predominantly a single period site, even though some Kaftari pieces were found. MS24 is not now close to any visible water source, whereas MS12 and MS14 in the same valley are both adjacent to the streams which still form part of the natural drainage system within the valley. An examination of aerial photographs has shown however, some evidence for an old stream bed flowing beside MS24, which eventually drained into the Solak stream. This was part of the drainage network emanating from the large alluvial fan in Dasht-e Rostam-e Yek (see Chapter 2.4), and has no doubt been modified by many modern and historical canals constructed to control water flow. The establishment of a major site at MS24 during the Middle Elamite period indicates a shift in choices behind settlement location, potentially related to the desire to monitor the pass between the valleys.

There are possibly as many as 8 sites that have occupation dating to the early 1st millennium BC (MS1, MS8, MS14, MS18, MS24, MS42, MS44, MS51), as suggested by the presence of Shogha and Teimuran painted wares and what are possibly Neo-Elamite plain-wares. This correlates with the possibility that there is Neo-Elamite occupation at Tol-e Nurabad (Phases B7a-b), and the recovery of Teimuran pottery from the surface of Tol-e Spid (MS51). Although these ceramic parallels are in many ways inconclusive, it is important to note that the figures shown proceeding down the stairways at Kurangun are believed to date to the Neo-Elamite period (8th-7th centuries BC) (see Chapter 1.4). While the sites with possible Neo-Elamite occupation in Dasht-e Rostam-e Do are widely dispersed and generally remain in the same locations as during the preceding period, the sites in Dasht-e Rostam-e Yek are all located reasonably close to the Kurangun relief (MS40). The potential for the presence of early 1st millennium BC occupation in the Mamasani region, contemporaneous with additions to the Kurangun relief is of immense significance for our understanding of Elamite history in Fars (see Chapter 6).

Achaemenid period

Ceramics (Figures 6.21-6.24)
The Achaemenid period ceramic assemblages of Fars are marked by some clear *leitfossils*, such as the round bottomed carinated bowl, but excavations have shown that these vessels, and many other Achaemenid ceramic forms continued being used into the Post-Achaemenid period (e.g. Stronach 1978; Boucharlat and Haerinck 1992a: 302; Boucharlat 2003: 262)[12]. In addition to the round bottomed carinated bowl (e.g. MSP 853, 902, TS 439), typical ceramic forms recovered in the survey include various bowl forms with a range of lip shapes (e.g. MSP 95, 703, 1809, 1687, 1707, 1754, 1798, 1801, 1804, 1806, 1811, 1813, 1828 and 1949), and a number of distinctive jar forms, which predominantly have an upright neck and also appear with a variety of rim and lip forms (e.g. MSP 79, 80, 562, 852, 861, 883, 890, 894, 895, 905, 938, 1386, 1699, 1704, 1708, 1767, 1771, 1805, 1843, also MSP 666, 871, 1799, 1812, 1818). Decoration is typically limited to incised horizontal grooves combined with low ridges (e.g. MSP 1731, 1766, 1802), and storage jars often have raised ridges (e.g. MSP 892, 1768).

Sites and Settlement Dynamics
Using the available published data and the finds from Phases 12-11 at Tol-e Spid and Tol-e Nurabad Phases B5-B4 as a basis for identification, Achaemenid period wares were recorded from 16 sites (MS1, MS2, MS9, MS12, MS14, MS18, MS20, MS22, MS23, MS37, MS42, MS44, MS45, MS46, MS47, MS51), which were fairly evenly spread through Dasht-e Rostam-e Do and Yek. These are typically located in close proximity to water sources, but it is notable that there are a number of sites on the western side of Dasht-e Rostam-e Yek that appear to be either new foundations, or new foundations on top of long-abandoned prehistoric mounds.

The most significant Achaemenid period sites identified in the survey appear to be MS46 (Tappeh Servan/Jinjan) and the other sites located close to it in the western part of Dasht-e Rostam-e Yek (MS 45 and 47), and MS22, which is situated in the middle of Dasht-e Rostam-e Do. The presence of a large number of *in situ* architectural finds at MS46 and the presence of the other sites with Achaemenid material in close proximity suggests that Tappeh Servan/Jinjan was a component of the Achaemenid administration of the region (also see Asgari et al. in press), and may well have been an Achaemenid Royal way-station. MS22 is also characterised by the presence of large Achaemenid style column bases, but most are now in secondary locations. At present, the function of MS22 is not clear, but it is notable that the site lies approximately 17 km from Jinjan, placing it within range of most estimates of the distance between way stations (e.g. Koch 1986; Tuplin 1998: 104ff; see also Asgari Chaverdi et al. in press)[13].

Post-Achaemenid periods

Ceramics (Figures 6.21-6.24)
A tentative differentiation between Achaemenid and Post-Achaemenid occupation at sites in Mamasani is

being proposed here, relying heavily upon the ceramic material from Phases 10 - 3 from Tol-e Spid, as well as the few published sites in Fars (e.g. Stronach 1978, Haerinck 1983). At this stage, our knowledge of local wares is still preliminary, and our interpretations are likely to be amended as work in Mamasani continues.

Sites and Settlement Dynamics
Up to 9 sites were found to contain minimal quantities of Post-Achaemenid (MS1, MS4, MS20, MS22, MS42, MS45, MS46, MS47, MS51), but few large assemblages were recovered. These sites are distributed throughout both Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do, and were all occupied during the Achaemenid period. The upper phases from Tol-e Spid (Phases 10-3) present an elaborate sequence of occupation, marked by regular rebuilds and remodelling on that part of the mound, and the radiocarbon dates emphasise that the site might have been occupied from the end of the Achaemenid period right up to c.50 BC. The lack of newly founded sites suggests that there was a general continuity in settlement location, but it is not yet possible to say how this might relate to changes in settlement and population size.

Sasanian and Islamic periods

Ceramics (Figures 6.25-6.28)
The most distinctive ceramic forms from the Sasanian and Islamic periods are glazed and painted wares, but significant quantities of other wares were also being utilised. The Sasanian and Islamic periods have not yet been represented in the excavations at Tol-e Spid and Tol-e Nurabad, so at present there is no clear stratigraphic context that can be used to characterise local ceramics, so the survey material from these two periods will be presented together here. Forms from each period can often be difficult to differentiate and attributions often rely on fabric variation and finishing techniques. Relying on the distinctive glazed and painted Islamic wares alone to separate the phases may create some bias in the numbers, which is likely to already be considerable, as this is the most recent of the chronological periods being considered. From the Sasanian period bowls with down-turned rims are distinctive (e.g. MSP 48, 63, 120, 825, 837, 893, 904, 907, 946, 1066, 1154, 1155 and 1945), and necked jars have a variety of characteristic rim forms, often flattened (e.g. MSP 43, 81, 82, 89, 98, 137, 533, 822, 862, 897, 900, 1062, 1148, 1158, 1161, 1177, 1182, 1187, 1526). Horizontal or combed wavy lines around the neck or the body of jars are typical of the Sasanian period, as are ridged bands of various shapes.

Sites and Settlement Dynamics
There appears to have been a considerable increase in site numbers during the Sasanian period with 23 sites identified (see Table 6.1). During the various Islamic phases the number of sites increases to 42, although not all of these sites are actually settlements (see Table 6.1).

Sites during the Sasanian period were widely distributed throughout the Dasht-e Rostam-e Yek and Do, and in many cases are situated in completely new locations (such as MS26, MS28, MS32 located either side of the pass between the main valleys). Other sites represent either a continuation of settlement location, or the re-establishment of occupation at abandoned prehistoric locations. In Dasht-e Rostam-e Yek more sites were located around the alluvial fan in the north of the plain (MS34, MS36), east and northeast of Tol-e Spid (MS51), as well as along the western edge of this valley (MS44, MS45). A network of sites is located at irregular intervals along the length of Dasht-e Rostam-e Do, (MS28, MS26, MS17, MS15, MS1, MS2, MS3, and MS6); in many instances along the path of the major streams and the southern face of the mountains. Their position may indicate a former road through the region. Few of our collections were large and this may reflect the restricted knowledge of Sasanian wares from excavation both here and elsewhere in Iran (see Boucharlat and Haerinck 1992: 306).

By the Islamic period, settlement distribution had changed considerably. Virtually every site in both valleys, including MS50, produced Early to Middle Islamic wares. The group of sites just to the north and east of Tol-e Spid were all now occupied, as were the sites at the W end of Rostam-e Yek. Considerable numbers of ware fragments were collected from each site. A contraction in site numbers and locations is apparent by the Middle Islamic period, generally diagnosed by the presence of ‘pseudo-prehistoric’ wares. These are dated to the 9th-11th centuries AD, and known locally from the site of Dau-o Dokhtar, MS7 (Whitcomb 1991). The other most diagnostic tool for identifying Islamic occupation is the presence of distinctive glazed wares. It is possible that some of the glazed wares identified as Islamic could belong to earlier periods, but until there are more local excavated sequences to draw from, glazed wares have been assigned later dates.

Although a few later Islamic period sites were recorded (MS48, MS49), fully identifying this phase was not a priority of the survey. To do so would have entailed a quite different strategy, concentrating around the perimeters of modern towns and villages as well as a more thorough historically-based approach.

6.3.2. Summary of Survey Results

The deep soundings excavated at Tol-e Spid and Tol-e Nurabad have provided a unique opportunity to characterise the cultural sequence of the Mamasani District, and provide an ideal means of assessing the survey data that has been collected from sites in the Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do. It is likely that many wares still remain unidentified, however with this local stratified sequence it was possible to securely assign many more survey sherds to chronological periods than would have been possible from published data alone. Some of the fabrics have not been seen elsewhere and the results to date are promising.

From our preliminary survey it is now possible to identify a number of settlement trends within the region, which reflect different events and choices during each chronological phase. Initially, during the Neolithic period, settlement appears to have been limited, and primarily clustered around the perennial springs in Dasht-e Rostam-e Do. This environment would have provided rich natural plant and animal resources, as well as a secure water supply. The identification of occupation dating to this period from survey data is of major importance, as no new Mushki or Jari period sites were identified during a recent survey in the valleys north-west of the Kur River Basin (Alizadeh 2003b: 87), nor were Archaic Susiana wares found in a survey of the Ram Hormuz plain (Wright and Carter, E. 2003: 65).

By the Bakun phase, there is an increase in the number of sites, and they are distributed in both Dasht-e Rostam-e Yek and Do. Settlements are still located close to water sources, but now tend to be in more open areas of the plain, near to perennial streams. It is during this period that several sites appear alongside the Solak stream, suggesting that it may have been used for irrigation (see Chapter 2.1.4). This trend for growth continues into the Lapui phase, but we see a shift in focus of occupation with a major new site (MS39) now established in Dasht-e Rostam-e Yek. Lapui sherds from the survey exhibited the typical traits of the ware first identified by excavation and survey in the Kur River Basin (Langsdorff and McCown 1942; Sumner 1988b), which have now expanded by the excavation of the substantial sequence of Lapui period deposits at Tol-e Spid. The discovery of previously unknown fabric types highlights the possibility that occupation dating to this phase would have been under-represented without the availability of a local ceramic sequence.

By the Banesh phase there is a considerable decline in the number of settled sites, which corresponds with trends observed in the Kur River Basin, and elsewhere between Fars and Khuzestan (Sumner 1972, Alizadeh 2003b: 88, Wright and Carter, E. 2003: 67 for example). This also corresponds with the appearance of urban Tal-e Malyan, which may have drawn much of the regional population within its environs. Until further excavations are carried out, we will have little idea of whether Tol-e Nurabad, Tol-e Spid or any other sites in Mamasani expanded during this period. At present, there is clear evidence for a long gap between Banesh and Kaftari phases at Tol-e Spid and Tol-e Nurabad. It will only be possible to see whether there is any evidence for the continuity of occupation between the Banesh and Kaftari periods with further excavations.

The apparent increase in the sedentary population of the valleys during the Kaftari period corresponds with the evidence for significant Kaftari period occupation at Tol-e Spid and Tol-e Nurabad, and also the major phase of relief carving at Kurangun, which suggests that the Mamasani region was of great significance during the early 2nd millennium BC. The importance of the region appears to continue for the rest of the 2nd millennium BC and into the early 1st millennium BC, as attested by the evidence for significant Middle Elamite occupation at Tol-e Nurabad, Tol-e Spid and MS24. The possibility that the region was occupied during the Neo-Elamite period, as suggested by limited surface finds and additions made to the Kurangun relief, is of immense significance for our understanding of Elamite history, and has the potential to provide specific insight into the last Elamite kings of Fars and the rise of the Achaemenids.

There is also considerable evidence for the occupation of the Mamasani district during the Achaemenid and Post-Achaemenid periods, which are of critical importance for our understanding of the evolution of the Achaemenid Empire and the way that it controlled regional areas within its homeland. The evidence from Tol-e Spid and Tol-e Nurabad combined with the results of the survey provides a unique opportunity to assess the Post-Achaemenid occupation of this part of Fars, which is very poorly known.

Although the analysis of the Sasanian and Islamic period is embryonic, the presence of the major sites of Nobandagan, Sarab-e Bahram, and Dum-e Mil in the Dasht-e Nurabad to the south, and the sizable quantity of sites of both periods recorded in the survey, suggest that the Mamasani District was an integral component of the Sasanian Empire, and continued to be occupied throughout the Islamic period.

The broad trends in the patterning of settlement within the Mamasani District appear to indicate that each of the major valleys has been continuously settled from possibly the late 7th millennium BC up to the present. Even though the plains contain a smaller cultivable area than many of the other surveyed intermontane valley systems in Fars and Khuzistan (e.g. Sumner 1972; Wright and Carter, E. 2003), 51 sites were located within the 153 sq. km covered by Dasht-e Rostem-e Yek and Dasht-e Rostem-e Do and included a number of mounded sites with significant multi-period occupation. Based on density of sites alone, the results from our preliminary survey show a ratio of 1 site per 3 sq. km, compared with c.1 per 2.3 sq. km for the Kur River basin (1400 plus sites in an area of c.3400 sq. km, Sumner 1990b: 93-4), suggesting that intensity of settlement in the two areas was comparable. In contrast, the Ram Hormuz survey isolated only 42 sites within a surveyed area of about 400 sq. km. This emphasises that some of the smaller valley systems along the route to upper Fars (such as the Mamasani District) should not be overlooked as major settlement areas (contra. Carter, E. 1994: 75), and have the potential to offer a significant contribution to our understanding of major issues in the prehistoric and historic archaeology of southwest Iran.

A number of the sites identified in the survey (e.g. MS1 and MS51) have a substantial depth of deposit, suggesting that they were true multi-period sites. Most of the other sites are considerably smaller, and although some are preserved to a significant height (e.g. MS20), there are a number of sites that appear to have been occupied for single periods. However, it is inescapable that this survey has focussed on mound sites, and attention has not yet been focussed on the identification of sites that might have been settled by nomadic or semi nomadic peoples, who are almost certain to have made up a significant part of the ancient population, as they continue to do up to the present day (see Chapter 2.3).

6.4. Site Gazetteer

The following section presents data collected at each site in a summarised format. All sites are referred to by a unique site number and local name where known. Some distinctions have been made in determining the types of site visited. Obvious above ground features such as raised earth mounds or architecture were used as the main criteria for determining the site type but in many instances such attributes were neither present nor dominant and some discretion was used. All anomalous above ground areas of raised earth were recorded as mounds, rather than tells, as it was not always clear what their specific function was. Some appear to be completely artificial; others may have been established on natural landforms and since modified, while others may have been constructed for special purposes other than settlement. As it was difficult to differentiate between these types during the survey, the more generic term of mound has been used to describe these sites. Where no other visible remains were present apart from artefacts, these 'sites' were recorded as artefact scatters. Information regarding the periods of occupation merely states the presence of diagnostic artefacts of a certain cultural phase, listed in chronological order, with no relative frequency of materials discussed here.

Site names were provided either by our guide, or by local informants. Some sites therefore were known by a number of different names, but generally the most common names have been used. Transliterations of the Persian names into English were done by Mohsen Zeidi and Alireza Khosrowzadeh.

MS1 – Tappeh Sorna (Figure 6.1)

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.640 *Easting*: 051°17.627
Elevation: 812 m asl
Dimensions: 100 m x 100 m x 24 m high
Area: 1 ha
Description: High roughly circular mound, with visible rectilinear stone architectural remains on upper area. Sides eroded around the base, with sloping upper areas covered by low grasses and weeds. Located on alluvial terraces 200 m north of the village of Kūpūn, surrounded by waterlogged fields, near spur in mountains where valley widens for the Tang-e Shib River. All passes out of the valley are visible from site. The small perennial Sarab Siah stream flows around the northern edge of the site. This was one of the sites visited by Stein (1940: 47), and was also described by Wells (1883: 160-161).
Occupation Periods: Ceramics indicate multi-period occupation. Finds from Late Middle Susiana, Early, Middle and Late Bakun, Lapui, Kaftari, Middle Elamite/Qaleh/Shogha/Teimuran, Achaemenid, Post-Achaemenid, Sasanian and Islamic periods represented.

MS2 – no name

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.453 *Easting*: 051°17.542
Elevation: 795 m
Dimensions: 70 m x 20 m x 2-3 m high
Area: 0.14 ha
Description: Heavily eroded crescent shaped low tell with upper area ploughed. Centre almost completely eroded (from N-W) by agriculture, forming existing shape. Two smaller raised areas of earth in northern end of mound. Site located 100 m southest of MS1 on raised alluvial terraces in a heavily modified landscape.
Occupation Periods: Middle Elamite/Qaleh, Achaemenid, Sasanian and Islamic.

MS3 – no name

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.406 *Easting*: 051°17.528
Elevation: 798 m asl
Dimensions: 70 m x 30 m x 1-3 m high
Area: 0.2 ha
Description: Roughly oval low mound located 300m S of MS1 on raised alluvial terraces in a heavily modified landscape. Longest axis running approx E-W. Mound slopes from c. 1-3 m high from E to W. Upper area has been completely ploughed. A layer of small pebbles can be seen in eroded sections (more clearly on western face) but no visible associated artefacts. Mound boundary heavily encroached upon by cultivation The Sarab Siah stream flows 100 m to the north of the site.
Occupation Periods: Sasanian to Islamic

MS4 – Tappeh Khājeh Mohammadi

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.227 *Easting*: 051°17.241
Elevation: 800 m asl
Dimensions: 50 m x 50 m x 7 m high
Area: 0.25 ha
Description: Squarish shaped mound, gently undulating upper surface, sloping away in all directions to steep eroded (undercut) sides; cultivation comes up to sides except along western edge where Sarab Siah stream flows past. Situated 1km southwest of MS1, heading towards pass of Pol-e Pirim. Situated in a heavily modified landscape of old alluvial terraces adjacent to foothills.
Occupation Periods: Lapui, Kaftari, Middle Elamite/Qaleh, Post-Achaemenid, Islamic periods.

MS5 – Tappeh Gonbad

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.231 *Easting*: 051°16.134
Elevation: 806 m asl
Dimensions: 20 m x 20 m x 3-5 m high
Area: 0.4 ha
Description: Small mound with eroded sides; stone walls showing in section. Visible architectural features suggest fortified site with corner bastions. Walls are rubble packed with outer dressed stones. Small remnants of low stone walls/terracing extend from mound. Site located on alluvial flood terraces near confluence of Tang-e Shib and Sarab Siah stream, 1.8 km west of MS4.
Occupation Periods: Middle Islamic.

MS6 – no name

Site Type: mound *Region*: Rostam-e Do
Northing: 30°20.293 *Easting*: 051°16.173
Elevation: 801 m asl
Dimensions: 20 m x 20 m x 3-4 m high
Area: 0.4 ha
Description: Small mound northeast of MS5 with remains of low stone wall, running southeast to northwest towards mound centre. Upper area of mound has numerous depressions and has been ploughed over. Lower raised area extends for 60 m towards the Tang-e Shib River. Area around site appears to have been extensively modified and remains of another stone wall (7 courses) preserved at edge of lower area, possibly for terracing. Site is located near the edge of alluvial terraces and riverbed, and has substantial quantities of pottery on the surface.
Occupation Periods: Possible Sasanian, Islamic.

MS7 – Dau-o Dokhtar Structures

Site Type: architecture *Region*: Rostam-e Do
Northing: 30°22.535 *Easting*: 051°17.981
Elevation: 828 m asl
Dimensions: 130 m x 40 m
Area: 0.5 ha
Description: Spreading complex of stone architectural remains with abundant surface pottery. Located at base of cliffs below rock cut "tomb" known as Dau-o Dokhtar, which is of possible Achaemenid to Post-Achaemenid period (see Chapter 1.2). Site littered with rubble remains and low walls with a few small graves near perimeter. Comprises a number of rectilinear structures, built of roughly dressed stones (blocks measuring c.60 x 90 cm). Located on northern side of Tang-e Shib River at eastern end of the plain. Area has been heavily modified by agriculture. Tomb published previously (Herzfeld 1935: 32; Stein 1940:7; Ghirshman 1944/45; Stronach 1978, Whitcomb 1991).
Occupation Periods: Middle Islamic period. Published dates for tomb between late 5th-3rd BC (Stronach 1978: 304); and pottery from base, AD 9-11th centuries, Middle Islamic (Whitcomb 1991).

MS8 – Tappeh Pashedān

Site Type: mound *Region*: Rostam-e Do
Northing: 30°21.650 *Easting*: 051°18.941
Elevation: 816 m asl
Dimensions: 110 m x 70 m x 6-7 m high
Area: 0. 8ha
Description: Large oval mound site situated approximately 500 m southwest of Sarab Siah springs in northwest Rostam-e Do. Raised central area on mound, has been slightly flattened from ploughing, before sloping to steeply eroded edges on three sides. A lower raised area extending to southeast. Mound area surrounded by further cultivation with sherds spreading into fields. The Tang-e Shib flows 2 kms to the northeast of the site.
Occupation Periods: Lapui, Banesh, Kaftari, Shoga/Teimuran, Middle Elamite, possible Neo-Elamite, Sasanian, Islamic.

MS9 – Eshkaft-e Karah[14] Khonge-Khanimeh

Site Type: cave *Region*: Rostam-e Do
Northing: 30°22.047 *Easting*: 051°18.998
Elevation: 869 m asl
Dimensions: 40 m x 15 m x 2.5 m high
Area: 0.06 ha
Description: Large rock shelter (facing SE) in small sheltered area of mountains forming northern boundary of Rostam-e Do, just before the pass into Rostam-e Se, overlooking the village of Upper Khanimeh. Shelter comprises wide open area with two enclosed chambers at either end (c.5x10 m and 10x10 m) with substantial head height (from 1.7 m to 2.5 m). An animal burrow in southwestern chamber indicates good potential stratified deposits in section. A single course of stones lines the face of each enclosed shelter and there is evidence of recent use (ash/fireplaces) as the site is still used by nomadic pastoralists. A large, high stone wall (c.5 m high x 2-3 m deep and 25 m wide) has been built onto from talus slope below and in front of shelter. Traces of other stone built structures around adjacent shelters and on the compacted terraces immediately below cave. Few artefacts were collected. Re-visit in 2003 showed that site still in use by goat herder. Stein comments on this cave, calling it Khunj-i Jamshid (Stein 1940: 45).
Occupation Periods: Bakun, Achaemenid, Islamic

MS10 – Tappeh Jovi Khanimeh (Figure 6.2)

Site Type: mound *Region*: Rostam-e Do
Northing: 30°21.432 *Easting*: 051°19.791
Elevation: 799 m asl
Dimensions: 100 m x 65 m x 1-3 m high
Area: 0.65 ha
Description: Roughly oval shaped mound c.1.4 km East-southeast of MS8 with irregular surface level from collapsed mud brick structures and other recent disturbance. Southern section of raised mound is now under cultivation. Mud brick walls from more recent phases preserved in places to c.18-20 courses (square bricks 25 cm x 8 cm). Site located adjacent to base of mountains and within c.50-100 m from perennial springs and the Sarab Siah stream.
Occupation Periods: Neolithic, Bakun, Sasanian-Islamic.

MS11 – Tappeh Zurband

*Site Type***:** mound *Region***:** Rostam-e Do
Northing: 30°21.256 *Easting*: 051°20.020
*Elevation***:** 796 m asl
Dimensions: 99 m x 97 m x 4-5 m high
Area: c.1.0 ha
Description: Low spreading mound about 500 m southeast of MS10, which has been completely ploughed over, with sections of upper mound removed. A small central area, c.20 x 30 m is 1 m higher and this too has evidence of ploughing. Site is bounded to the east by marsh lined natural stream, just west of the branch of the Sarab Siah stream as it leaves the foothills. It is located in an area of high ground water.
Occupation Periods: Neolithic, Bakun, Lapui, and possible Sasanian-Islamic periods.

MS12 – Tol-e Khasm

*Site Type***:** mound *Region***:** Rostam-e Do
Northing: 30°20.951 *Easting*: 051°18.447
*Elevation***:** 805 m asl
Dimensions: 110 m x 50 m x 2 m high
Area: 0.5 ha
Description: Low evenly rising mound with edges eroded from ploughing. Located in southwest of valley 2 kms east of Tang-e Shib River, and c.1.4 km northeast of MS1. Visible high water table surrounds site in a heavily modified area.
Occupation Periods: Lapui, Banesh, Kaftari, Middle Elamite/Qaleh, Achaemenid.

MS13 – Fakhre Makan

*Site Type***:** architecture *Region***:** Rostam-e Do
Northing: 30°20.591 *Easting*: 051°17.990
*Elevation***:** 798 m asl
Dimensions: 90 m x 70 m
Area: 0.6 ha
Description: Remains of mud brick structures, heavily disturbed by more recent derelict stone and cement structures. Undulating surface from mud-brick collapse and cultivation - dimensions of original site impossible to measure, likely greater than 100 x 200 m. Located along Sarab Siah River along the southern side of valley, c.600 m east of MS1, 1 km southwest of MS12.
Occupation Periods: No artefacts. Building remains appear to be recent historic periods, Islamic.

MS14 – Tol-e Bondu

*Site Type***:** mound *Region***:** Rostam-e Do
Northing: 30°19.522 *Easting*: E 051°21.45
*Elevation***:** 815 m asl
Dimensions: 97 m x 75 m x 10-15 m high
Area: 0.75 ha
Description: Heavily disturbed and eroded mound site, with undulating upper surface from localised mud-brick building collapse. Preserved area located on southern side of Solak stream which has undercut much of the steeply eroded northern edge of the mound. Lower southern portion now has a small modern building and track cut through for access. Active erosion gullies cutting through the mound, particularly at western end. This site was visited by Stein (1940: 44).
Occupation Periods: Bakun, Lapui, Banesh, Kaftari, Middle Elamite/Qaleh/Shogha/Teimuran, Achaemenid, Islamic.

MS15 – Tappeh Rasad

*Site Type***:** mound *Region***:** Rostam-e Do
Northing: 30°19.882 *Easting*: 051°20.672
*Elevation***:** 803 m asl
Dimensions: 150 m x 133 m x 2 m high
Area: 1.95 ha
Description: Low spreading mound with a slightly raised rectangular central area, following stone wall remains. Preserved walls extend c.15m x 28 m, possibly at least 3 walls (roughly dressed and un-coursed stone and mortar construction). Site has been cleared extensively of stone within past 3 years (Habibi, pers comm.) accounting for stones piled around the site and has been disturbed by extensive agriculture and animal burrowing. It is situated adjacent to the Solak stream and a modern irrigation channel.
Occupation Periods: Sasanian-Islamic.

MS16 – Tappeh Arab Khākak

*Site Type***:** mound *Region***:** Rostam-e Do
Northing: 30°20.359 *Easting*: 051°19.954
*Elevation***:** 814 m asl
Dimensions: 50 m x 20 m x 2-3 m high
Area: 0.05 ha
Description: Possibly also called Tappeh Moshki. Heavily disturbed mound now appears to be an earthen and stone ‘dam’ or water control structure, comprising a series of smaller raised mounds. Larger central mound of earth and stone is roughly triangular in shape, separated from narrower raised mounds either side. The face of the central mound rises straight up and has been reinforced with stones, while the opposite end slopes down gradually to valley level. Few artefacts found. Site is located 1.45 km northwest of MS15, and 400 m from the Sarab Siah stream in an area surrounded by high groundwater and extensive rice cultivation.
Occupation Periods: Neolithic.

MS17 – Tappeh Solak Dehnow Sādāt

Site Type: mound *Region*: Rostam-e Do
Northing: 30°18.877 *Easting*: 051°22.951
Elevation: 817 m asl
Dimensions: 109 m x 77 m x 3-4 m high
Area: 0.8 ha
Description: Heavily disturbed mound with remains of rectilinear mud-brick structures and more recent building (modern water pumping facility). Decaying mud-brick walls have caused localised mounds/depressions (similar to walls at Tol-e Spid). Site reported to have been abandoned about 35 years ago but signs of recent digging and animals tethered on site. It is located c.400 m northeast of MS18.
Occupation Periods: Neolithic, Sasanian, Islamic.

MS18 – Tappeh Dehnow Sādāt

Site Type: mound *Region*: Rostam-e Do
Northing: 30°18.739 *Easting*: 051°22.747
Elevation: 821 m asl
Dimensions: 80 m x 30 m x 5 m high
Area: c.0.25 ha
Description: Heavily disturbed mound partially covered by modern town, located about 400 m southwest of MS17. Mound is steeply undercut on northern boundary by the Solak stream and upper layers at the south have been modified by modern building. The eastern section is also eroded, appearing to have been cut away. Site is covered with modern debris.
Occupation Periods: Lapui, Middle Elamite/Qaleh, Teimuran, possible Achaemenid

MS19 – Tappeh Sar Cheshmeh Sarāb Siah

Site Type: artefact scatter *Region*: Rostam-e Do
Northing: 30°21.476 *Easting*: 051°20.202
Elevation: 808 m asl
Dimensions: 200 m x 100 m x 1-2 m high
Area: 2 ha
Description: Site is situated on a rocky slope at the base of the northern boundary of Dasht-e Rostam-e Do in close proximity to perennial springs feeding the Sarab Siah stream. It lies about 200 m northeast of MS21 (burial site). Surface sherds extend from upper rocky slopes and down into cultivated lower field area. Heavily landscaped area has been terraced with low stone walls and recent tree planting nearby. The location provides good line of sight over the valley in all directions and particularly southeast to the pass into Rostam-e Yek (Yagheh Sangar).
Occupation Periods: Sasanian, Islamic.

MS20 - Tappeh Mollā Shamshiri (Figure 6.3)

Site Type: mound *Region*: Rostam-e Do
Northing: 30°21.180 *Easting*: 051°20.167
Elevation: 802 m asl
Dimensions: 90 m x 70 m x c.6 m high
Area: 0.6 ha
Description: High circular mound surrounded by marshy boggy land under rice cultivation in all directions (literally an island). It is located 500 m south of MS19 and immediately southeast of MS10 and MS11, close to the springs. Mound has been damaged with steep eroded lower sides and more undulating erosion on upper areas. A small path leads up and along side of mound.
Occupation Periods: Neolithic, Bakun, Lapui, Achaemenid, Post Achaemenid, Sasanian, Islamic.

MS21 – no name

Site Type: cemetery *Region*: Rostam-e Do
Northing: 30°21.415 *Easting*: 051°20.304
Elevation: 803 m asl
Dimensions: 40 m x 30 m x 1-2 m high
Area: 0.12 ha
Description: Raised area of compacted earth with rectangular roughly dressed stone alignments at ground level, which appear to be burials but have no headstones. Structures aligned roughly east west and are of varying sizes with larger examples c.2.8 m x 2.0 m; smaller ones may be for children. Remains of about 60-80 interments are visible. Site located about 220 m east of MS19 and 3.5 km northwest of MS22 in the northern foothills of the valley.
Occupation Periods: Islamic

MS22 – Tappeh Pahnu

Site Type: artefact scatter *Region*: Rostam-e Do
Northing: 30°20.548 *Easting*: E 051°22.259
Elevation: 815 m asl
Dimensions: uncertain, c.100 m x 200 m
Area: uncertain
Description: Heavily modified agricultural land now modified into low terraced fields. Three column bases located in the nearby village are said to have come from the area and one plain base still *in situ* in field. There are no traces of original dimensions of a site or any other distinguishing features. Area has been heavily modified by modern cultivation and irrigation works.
Occupation Periods: Banesh, Middle Elamite/Qaleh, Achaemenid, Post Achaemenid, Sasanian, Islamic.

MS23 – Tol-e Borj

Site Type: mound *Region*: Rostam-e Do
Northing: 30°19.493 *Easting*: 051°23.038
Elevation: 821 m asl
Dimensions: 85 m x 75 m x 7 m high
Area: 0.65 ha
Description: High mound with steep eroded lower edges on all sides cut by cultivation or drainage works. Upper surface has been ploughed over. Southern edge slopes down to and is bounded by modified ephemeral stream channel. Exposed stone alignment visible in west section, c.2.5 m above base. Further stones exposed in northwest face at same level with blocks c.50 cm long. Mound also damaged by numerous burrows. This site appears to have been visited by Stein (1940: 44).
Occupation Periods: Bakun, Middle Elamite/Qaleh, Achaemenid, Sasanian, and Islamic.

MS24 – Tappeh Dozak

Site Type: mound *Region*: Rostam-e Do
Northing: 30°17.742 *Easting*: 051°24.424
Elevation: 829 m asl
Dimensions: 140 m x 150 m x 3-4 m high
Area: 2 ha
Description: Low spreading mound, oval in shape oriented southeast-northwest along main axis; edges damaged by surrounding cultivation and upper area ploughed over. Low stone/earth boundary walls have been built across site, and a number of large, deep pits have been dug into the upper area. Site is located just south of the main road through the valley and next to the smaller of two large rock outcrops rising from the valley floor. No visible water sources; near to ephemeral streams perhaps.
Occupation Periods: Possible Kaftari, Middle Elamite/ Qaleh/Shogha/Teimuran, possible Neo-Elamite.

MS25 - Eshkaft-e Gābari

Site Type: cave *Region*: Rostam-e Do
Northing: 30°20.129 *Easting*: 051°19.012
Elevation: 853 m asl
Dimensions: 25 m x 2-5 m x 3-10 m high
Area: c.125 m^2
Description: Cave with external rock shelter located high in cliffs above modern village. Low narrow opening, c.2x1.2 m leads into a larger high central chamber, branching off to the right for about 20-25 m. Head height averages about 3 m inside and could reach a maximum clearance of c.10 m in the central chamber. Roof has a very small opening above the central chamber but it is almost completely dark inside. Large burrows/holes towards rear indicate deep deposits.
Occupation Periods: No visible surface artefacts.

MS26 – Tol-e Mohammad Sālehi

Site Type: mound *Region*: Rostam-e Do
Northing: 30°18.263 *Easting*: 051°24.622
Elevation: 838 m asl
Dimensions: 55 m x 18 m x 1-2 m high
Area: 0.1 ha
Description: Sub-rectangular shaped mound with abundant stone/baked brick collapse over surface. Traces of rectangular structures visible (stone foundations overlain with bricks). Site located roughly in the middle of the valley at the southeast end on alluvial build-up and gravels.
Occupation Periods: Sasanian, Islamic

MS27 – Buādam

Site Type: Settlement *Region*: Rostam-e Yek
Northing: 30°19.236 *Easting*: 051°25.044
Elevation: 946 m asl
Dimensions: 120 m x 50 m
Area: 0.6 ha
Description: Spreading settlement site on flattened hill located half way up northern valley slopes. An Islamic period cemetery located on approach slope. The summit of the hill has been levelled with terraced walls and remains of rectilinear coarsely dressed stone structures visible at ground level.
Occupation Periods: Middle Islamic

MS28 – Tappeh Yagheh Sangar Khonge Tāheri

Site Type: Small mound *Region*: Rostam-e Do
Northing: 30°17.712 *Easting*: 051°25.434
Elevation: 823 m asl
Dimensions: 60 m x 60 m x 3 m
Area: 0.2 ha
Description: Small, low mound, basically sub-rectangular, appears to have accumulated over the remains of rectilinear stone building, some surface traces remaining. Small trenches have been dug into the mound revealing roughly dressed stones. Mound could have extended east and south but now ploughed over. Located northwest of the pass into Rostam-e Yek.
Occupation Periods: Sasanian to Islamic periods.

MS29 – Yagheh Sangar wall

Site Type: feature *Region*: Rostam-e Do
Northing: 30°17.236 *Easting*: 051°26.017
Elevation: 859 m asl
Dimensions: c.1 km across pass
Area: -
Description: Not fully surveyed. Traces of wall built across the pass, still visible coming down slope on the northern and southern sides of Yagheh Sangar. Wall constructed of large roughly dressed stone with internal rubble fill, possibly 1 m thick or wider in parts, not preserved in lower areas because of roadway. Proposed as the location of the “Persian Gates” by Herzfeld (1968) and the site of the battle with the Uxians by Stein (1940: 39-43).
Occupation Periods: No artefacts collected; construction date uncertain.

MS30 – Eshkaft-e Yagheh Sangar

Site Type: caves *Region*: Rostam-e Yek
Northing: 30°17.225 *Easting*: 051°25.963
Elevation: 885 m asl
Dimensions: see below
Area: uncertain
Description: Caves/rock shelters above narrow pass between Rostam-e Yek and Rostam-e Do. Cave 1 comprises two chambers, c.15-20 m x 6-8 m and 3-5 m high. Good potential for archaeological deposit in caves but surface covered with modern rubbish. Cave 2 consists of two high open shelters divided by an overhang. Cave 3 is 400 m further southeast, 5 m x 8 m covered by an overhang with stone alignments and area of compacted earth immediately outside. A large scatter of chipped stone starts outside the entrance to each cave and continues down slope. Site has recently been used as goat pen.
Occupation Periods: Prehistoric, possibly Neolithic to Chalcolithic from lithic artefacts; ceramics indicate Islamic only.

MS31 – Tappeh Nāderi

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°16.646 *Easting*: 051°26.686
Elevation: 864 m asl
Dimensions: 150 m x 100 m x <1 m high
Area: 1.5 ha
Description: Large, low, spreading mound at south-eastern end of narrow Yagheh Sangar pass. It is completely ploughed over and rapidly being absorbed into the agricultural plain. No structural remains, only artefact scatter. Stream/channel extending from man-made canal alongside Tol-e Spid flows past site area into Rostam-e Do joining Solak stream.
Occupation Periods: Bakun.

MS32 - Kul Ba Kul

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°16.361 *Easting*: 051°26.690
Elevation: 865 m asl
Dimensions: 70 m x 50 m x 1 m high
Area: 0. 35 ha
Description: Low spreading mound slightly above the level of surrounding cultivated fields, and ploughed over. Barely discernible, located in sloping ground adjacent to the mountain side. Long sides damaged from erosion/cultivation, and there are stones visible on the surface. It is located about 100-150 m to the east of the rock outcrop forming southwest end of Yagheh Sangar pass.
Occupation Periods: Sasanian, Islamic.

MS33 – no name

Site Type: architecture *Region*: Rostam-e Yek
Northing: 30°16.428 *Easting*: 051°26.643
Elevation: 879 m asl
Dimensions: 25 m x 10 m x 10 m
Area: 0.025 ha
Description: Remains of two rectilinear stone structures built onto terraced lower slope of mountain outcrop on southwestern side of Yagheh Sangar pass, near cemetery of Kul Ba Kul. Walls are about 80 cm wide faced with dressed stone on each side and interior rubble packing; preserved to five courses in places. The structures have been built onto bedrock and have some interior walls. Lower on the rock face west of these ruins; a large rectangular section of rock face has been removed forming a narrow ledge near ground level. A simple rectilinear stone structure, c.6 m x 5 m, and remains of a stone wall, with rubble packing, are visible in front of the feature.
Occupation Periods: Islamic.

MS34 – Tol-e Pir

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°16.041 *Easting*: 051°29.970
Elevation: 878 m asl
Dimensions: 220 m x 120 m x 5 m high
Area: 2.6 ha
Description: Long spreading mound running alongside road to Tol-e Pir village with *in situ* grinding emplacements in bedrock at end of mound. It appears to be a small natural hill with low rock outcrops. Further east it is ploughed over and appears more like an artificial mound. It is possible that the grinding area may be older than the ceramics on rest of mound.
Occupation Periods: Sasanian-Islamic.

MS35 – Chāhār Bāzār

Site Type: architecture *Region*: Rostam-e Yek
Northing: 30°15.540 *Easting*: 051°29.426
Elevation: 875 m asl
Dimensions: 300 m x 250 m x 1 m high
Area: 7.5 ha
Description: Complex of small low mounded areas containing architectural traces and dense artefact scatters spread out across large area. Site has been heavily disturbed by roads, cultivation and modern farm buildings and is situated c.4.5 km southeast from pass into Dasht-e Rostam-e Do. This site was visited by Baron de Bode (1843: 81) and Stein (1940: 38).
Occupation Periods: Islamic

MS36 – Tappeh Kushkak

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°15.118 *Easting*: 051°29.666
Elevation: 890 m asl
Dimensions: 80 m x 90 m x 10 m high
Area: 0.7 ha
Description: High mound rising sharply from surrounding waterlogged plain clearly visible 900 m east of Tol-e Spid, Chāhār Bāzār visible to northeast. Remains of extensive decomposing mud-brick and stone architecture cover the top of the mound. Edges of the site have been undercut by farming. Some stone architecture preserved to 5-6 rough courses. Surrounded by rice cultivation and situated close to the course of the Gurab stream.
Occupation Periods: possible Lapui, Sasanian, Islamic.

MS37 – Tol-e Band Barik

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°15.292 *Easting*: 051°29.808
Elevation: 870 m asl
Dimensions: 80 m x 60 m x 2 m high
Area: 0.5 ha
Description: Low rounded spreading mound, completely ploughed over. Site located adjacent to Gurab Stream which flows around edge of alluvial fan in northern Rostam-e Yek, along northern and eastern edges of the mound. No visible features.
Occupation Periods: Achaemenid, Islamic

MS38 – Tol-e Bikasi

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°15.674 *Easting*: 051° 30.851
Elevation: 907 m asl
Dimensions: 120 m x 80 m x 1 m high on natural
Area: 0. 96 ha
Description: Long narrow rectilinear compacted earth mound with graduated terraced edges, re-enforced with low stone and mortar walls. Site located at the foot of the Goveh Mountain in the north-eastern part of the valley. Area is covered with chipped/fractured (natural) angular stones containing chert nodules.
Occupation Periods: Islamic.

MS39 – Tappeh Mishband (Figure 6.4)

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°13.198 *Easting*: 051°31.819
Elevation: 904 m asl
Dimensions: 160 m x 80 m x 6 m high
Area: 1.3 ha
Description: Large high spreading mound immediately west of modern village. Top of mound has been ploughed and earth and stones pushed aside. Erosion along northwest/west sides has cut deeply into mound and entire southern face has been undercut by stream channel. Abundant pottery is visible in the steep sections of exposed bank. Remaining sides of the mound have been strengthened by stone walling elsewhere but original extent unknown. Located in southest of Dasht-e Rostam-e Yek; heavily modified landscape with agriculture, terracing and re-enforced natural drainage courses.
Occupation Periods: Lapui, possible Banesh, Sasanian, Islamic.

MS40 – Kurangun Structures

Site Type: feature *Region*: Rostam-e Yek
Northing: 30°14.675 *Easting*: E 051°27.638
Elevation: 915 m asl
Dimensions: c.20 m x c.8 m
Area: 0.04 ha
Description: On the hilltop immediately behind the low relief rock carving known as Kurangun are the remains of rectilinear stone architecture. Traces of walls are visible on surface and recent illegal excavation has revealed preservation to a depth of up to 1.5 m. Architectural remains extend over an area of at least 20 m x 8 m and comprise a number of rooms. Walls are double faced with interior rubble packing and mortar, up to 1.2 m wide. Few artefacts collected from this area. On east approach slope about half way up is another cleared terrace of land, 15 x 3 m, lined with roughly dressed local stone. High position overlooks Rostam-e Yek in all directions including back to pass. For details of the relief, see references listed in Chapter 1.
Occupation Periods: The reliefs have been dated to the Sukkalmah phase of the Elamite period, c.1900-1600 BC, overlapping locally with the Kaftari period. Some panels were apparently added in the 8th-7th century BC (Neo-Elamite). Ceramics indicate Sasanian-Islamic periods.

MS41 – Se Tolun 1

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°15.118 *Easting*: 051°29.666
Elevation: 850 m asl
Dimensions: 120 m x 80m x 1-2 m high
Area: 0.96 ha
Description: Low spreading raised earth mound, edges cut by surrounding cultivation and partially covered by modern buildings. Site located near base of Kurangun outcrop adjacent to Rud-e Fahlian floodplain. Few artefacts collected.
Occupation Periods: Islamic.

MS42 – Se Tolun 2

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°14.906 *Easting*: 051°27.706
Elevation: 850m asl
Dimensions: 70 m x 40 m x 1-2 m high
Area: 0.3 ha
Description: 3 areas of raised ground around modern village, Se Tolun, located at foot of Kurangun outcrop and on edge of Rud-e Fahlian plain. Damaged by cultivation, building and one area used as modern cemetery. Remains of mud brick walls visible in section of the cemetery mound. Northern strip of raised land is mostly cultivated, edges have been consolidated into a levee-like construction and there are remains of un-coursed stone/mortar wall in damaged section. Across road, inhabited and derelict buildings occupy another raised area but impossible to define actual extent. Area disturbed by modern building and road.
Occupation Periods: Middle Elamite/Shogha/Teimuran, possible Neo-Elamite, Achaemenid, Post-Achaemenid, Sasanian Islamic.

MS43 – Tol-e Kohneh Zirdu

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°14.341 *Easting*: 051°25.724
Elevation: 846 m asl
Dimensions: 60 m x 50 m x 9-10 m high
Area: 0.3 ha
Description: Remains of large, high steep-sided mound, partially covered by modern village, and recently abandoned mud-brick buildings on top. Sides damaged from agriculture and other farming, southern face has been cut away leaving exposed steep sides. In some cut sections of the mound, there are signs of stone foundations clearly visible. It appears that the remaining mound area is only a very small proportion of original extent; lower area probably extended out as far as current position of river, c.80 m to the south, c.30 m to the west and for an indeterminate extent in both other directions. This site was possibly visited by Stein (1940: 36).
Occupation Periods: Possible Neolithic, Bakun, Lapui, possible Banesh, Islamic.

MS44 – Tol-e Mirza Mohammadi

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°15.168 *Easting*: 051°24.640
Elevation: 823 m asl
Dimensions: 60 m x 190 m x 3-7 m high
Area: 1.25 ha
Description: Large site located in the far west end of the valley near the Rud-e Fahlian extending over an area of c.350 m north to south. Comprises 3 distinct mounds heavily encroached upon by cultivation and associated irrigation works. The largest and highest is furthest north, with a low spreading level area separating it from the next mound by an irrigation canal. The main mound is roughly oval, with a high flattened summit and eroded sides. East face shows traces of stone architecture and burning in section. Large caves were noted in mountain sides to the north.
Occupation Periods: Kaftari, Middle Elamite/Qaleh, possible Shogha/Teimuran, Neo-Elamite, Achaemenid, Sasanian, Islamic.

MS45 – Tappeh Bātlage Qaleh No

Site Type: mound *Region*: Rostam-e Yek
Northing: 30°13.162 *Easting*: 051°27.992
Elevation: 855 m asl
Dimensions: 89 m x 85 m x 8 m high
Area: 0.75 ha
Description: Large spreading rectangular mound tiered into three main levels. Upper section roughly square with a central depression and more substantial 'corners' suggesting an exterior wall and corner buildings. Possible traces of stone near upper edge and in NE corner. Site surrounded by waterlogged fields and cultivation.
Occupation Periods: Bakun, Lapui, Achaemenid, Post Achaemenid, Sasanian, Islamic.

MS46 – Tappeh Servan Jinjan

Site Type: architecture *Region*: Rostam-e Yek
Northing: 30°13.532 *Easting*: E 051°26.792
Elevation: 844 m asl
Dimensions: 30 m x 50 m x 2 m high
Area: 0.15 ha
Description: Exposed Achaemenid style column bases and traces of large rectilinear building; roughly coursed stone walling partially covered by soil, about 25-30 m long along north-south axis. Modern village partially located over northeast corner of site. Raised above level of surrounding cultivation. Partially excavated by a Japanese expedition in the 1950s, interpreted as part of Achaemenid Royal Road system, but no building plan uncovered (Atarashi and Horiuchi 1963)[15].
Occupation Periods: Achaemenid, post –Achaemenid.

MS47 – Tappeh Mohammad Kāzemi

*Site Type***:** mound *Region***:** Rostam-e Yek
Northing: 30°13.766 *Easting*: 051°26.688
*Elevation***:** 844 m asl
Dimensions: 80m x 50 m x 3-5 m high
Area: 0.4 ha
Description: Small sloping mound, northwest of Jinjan (MS46), about 200 m S of Rud-e Fahlian. Ploughing over top of mound and surround has damaged mound area. No visible architecture. Site located in well watered section of valley, bordering outwash zone of river. Possibly visited by Stein (1940: 36).
Occupation Periods: Lapui, Banesh, possible Kaftari, Middle Elamite, Achaemenid, Post-Achaemenid.

MS48 – Tappeh Qala Tak

*Site Type***:** artefact scatter *Region***:** Rostam-e Yek
Northing: 30°11.358 *Easting*: 051°29.718
*Elevation***:** 940 m asl
Dimensions: approx. 190 m x 160 m x 17-20 m
Area: 3.4 ha
Description: High probably natural hill with possible additional mounded area near summit. Slopes have been reinforced and terraced with stones. A recent modern building is located on the summit with an unsealed road leading up to it. The site may contain ruins of the fort referred to by de Bode in 1840 (cf. Şadāqat-Kiš 1999: 162). Northwest slope has small plots under cultivation, with larger fields and village at base. Located in the dry rocky piedmont region in the south-west of the valley.
Occupation Periods: Islamic.

MS49 – Hammam va Asiab-e Fahlian

*Site Type***:** architecture *Region***:** Rostam-e Yek
Northing: 30°11.215 *Easting*: 051°29.480
*Elevation***:** 923 m asl
Dimensions: 30 m x 50 m
Area: 0.15 ha
Description: Not fully surveyed - semi-subterranean *hamam*, located c.600 m southwest of MS48. Stone built with vaulted arches built into ground; roof missing in areas. Complex consists of series of 4-5 chambers/rooms with main chamber divided into smaller cells. Above the site is an inscribed dedication dating to mid 18th century (AD 1749), regarding the rebuilding of the town of Fahlian following the Afghan invasions in AD 1722 (see Chapter 2.2.1). Behind the *hammam* is a ruined stone built water tower and remains of a *qanat* system lie under fields to the east. A Safavid period bridge/aqueduct is 1.25 km further east over a now dry rocky channel close to the mountain sides. According to de Bode these pre-dated Afghan incursions (i.e. Safavid period; Şadāqat-Kiš 1999:162-3).
Occupation Periods: All Late Islamic artefacts, Safavid to Zand periods, 17th-18th century.

MS50 – Tol-e Seyyed

*Site Type***:** mound *Region***:** Rostam-e Yek
Northing: 30°10.415 *Easting*: E 051°32.926
*Elevation***:** 973 m asl
Dimensions: 100 m x 70 m x 12 m high
Area: 0.7 ha
Description: Large high mound site with remains of substantial mud-brick structures, preserved to almost 3 m, including fortifications (bastion) in the SE corner. Undulating upper surface from ruins and ploughing; a vehicle track leads up along the east edge. Erosion and encroaching cultivation have exposed lower sides, reducing the original extent of the mound. Site located 800 m south of Rud-e Fahlian with two small streams nearby. Surface finds were interspersed with modern rubbish.
Occupation Periods: Late Islamic.

MS51 – Tol-e Spid (see Figures 4.1-4.4)

*Site Type***:** mound *Region***:** Rostam-e Yek
Northing: 30°15.137 *Easting*: 051°29.060
*Elevation***:** 900 m asl
Dimensions: 175 m x 120 m x 16 m high
Area: 2.1 ha
Description: This mound is located in the centre of the Dasht-e Rostam-e Yek. It has been heavily disturbed, and only 2 ha are preserved. The top of the site is covered with the remnants of recent mudbrick ruins, and a number of modern buildings have been built at the NE end. Parts of the site have been removed by bulldozer. A deep sounding was excavated in 2003 (see Chapter 4).
Occupation Periods: Surface artefacts indicated occupation from Bakun, Lapui, Banesh, Kaftari, Middle Elamite, Shogha/Teimuran, Achaemenid, Post-Achaemenid, and Sasanian-Islamic wares.

Notes

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[1] During the course of the survey, the survey team was regularly accompanied into the field by Professor D.T. Potts, and were also assisted by Karim Alizadeh, Morgan Potts and Hallam Potts. A comprehensive account of the work has been prepared by Ms McCall for her Ph.D. dissertation (McCall 2009).

[2] It should be noted that when this synthesis was published, there were no calibrated radiocarbon dates available for the period prior to c.5500 BC. The recent excavations at Toll-e Bashi in the Kur River Basin have produced radiocarbon dates for post-Mushki occupation that stretch into the late 7th millennium BC, which indicates that the Mushki period in region may well begin as early as this.

[3] MS20 is currently surrounded by standing ground water that is used for rice cultivation (Figure 6.3 and also Figure 2.9).

[4] Interestingly, Sumner (1977: 302) suggested that the density of Neolithic sites in Mamasani was much less than was expected, although his calculations were based on the three mounds identified by Stein (1940: 27-40).

[5] Blades with and without sheen were found at MS23 (Neolithic to Chalcolithic periods) and can be seen to accord with the ceramic chronology. Blades with silica sheen were found at MS8 and MS31, but this trait continues into the later Lapui phase, as it indicated by their appearance at MS39, a site dominated by Lapui wares (this trait has also been shown at Chogha Mish to span Archaic to Proto-literate periods – see Delougaz and Kantor 1996: Part 2.Pl. 254), so is not as diagnostic as the ceramics.

[6] MS9 is only a rock shelter, and it is possible that the sherd that was recovered was a stray find. Nevertheless, it is possible that additional evidence for prehistoric occupation might be buried by later deposits.

[7] MS51 and MS43 may be useful for exploring previously published ideas about the dynamics of Bakun to Lapui settlement (see Sumner 1988b), as will further investigation at MS1 in Dasht-e Rostam-e Do. The discovery of previously unknown fabric types in the excavated deposits at Tol-e Spid (see Chapter 4.7.2) highlights the possibility that occupation dating to this phase would have been under-represented without the availability of a local ceramic sequence.

[8] It is notable that MS47 and MS51 are the only survey sites that produced fragments of bevelled-rim bowls in the surface collection, and both are located in Dasht-e Rostam-e Yek.

[9] The dating of the major relief at Kurangun to this phase suggests that the Mamasani region was of great significance during the early 2nd millennium BC (see Chapter 1.3 and Chapter 6).

[10] The chronological limits of the use of Shogha and Teimuran wares in Fars are not clearly defined (see Carter, E. 1992: 295-297; Jacobs 1980; also Sumner 1994a; Boucharlat 2003). The appearance of these wares together with Qaleh ware at Darvazeh Tepe suggests that they were partially contemporaneous with the Middle Elamite levels at Tal-e Malyan, which also contain Qaleh ware (see Chapter 1.4). However, the absolute dating evidence from Darvazeh Tepe suggests that Shogha and Teimuran wares continue being used into the very early 1st millennium BC, up to c.900 BC, which is partially contemporaneous with Neo-Elamite I in Khuzestan (Chapter 1.4). Darvazeh Tepe remains the only site where Shogha and Teimuran wares have been recovered from dated deposits, but the absolute dates for the sequence are inconsistent and therefore problematic. In this discussion, Shogha and Teimuran wares will be considered being primarily contemporaneous with the Middle Elamite, but partially overlapping with the early Neo-Elamite period of Khuzestan.

[11] Tal-e Malyan is the only site previously excavated in Fars that has Middle Elamite ceramic material, and this occurred together with Qaleh ware forms (Carter, E. 1996). However, in Phases B9-B8 at Tol-e Nurabad, Middle Elamite plain ware ceramics are present without painted ware, which is similar to the situation at sites in Khuzestan (see Chapter 3.8.2 and Chapter 6). A small number of Middle Elamite sherds were also recovered from Phases 14 and 13 at Tol-e Spid (see Chapter 4.7.2).

[12] Sumner referred to this material collectively as Late Plain Ware (1972), which appears in a broad range of colours, ranging from dark grey to orange, red, brown and buff, and which are tempered with fine to coarse grit.

[13] Several attempts have been made to identify locations mentioned in the Persepolis Fortification Texts that lie on the route or routes between Persepolis and Susa (e.g. Mostafavi 1963: 16-18; 1967: 3008-3010; Hinz 1961: 250-251; Hallock 1978: 109ff; Koch 1986; 1990; 1992: 68-73; Aperghis 1996; 1998; 1999; Tuplin 1998). Although these reconstructions are all somewhat different, they typically identify Mamasani as a key part of the route, and have suggested that there were Royal way-stations and or storehouses in this region (see Koch 1986; 1990; Tuplin 1998: 106; Aperghis 1998; 1999: 154). Archaeological evidence for the presence of such a structure was published following the excavation of the site of Jinjan, or Tappeh Suruvan (re-surveyed as site MS46), which although limited, included diagnostic architectural remains and a number of ceramic finds (Atarashi and Horiuchi 1963: Plates XV-XVIII).

[14] This is also the local word for stream or spring.

[15] According to Ṣadāqat-Kiš (1999: 162), these ruins are locally called Emamzada Esmail, and are on a hill called Tol-e Coga.